1992 · 9 北京
妇女在环境和持续发展中的作用
国际研讨会

Interregional workshop on the role of women in environmentally sound and sustainable development

VOLUME II:
PROJECT PROFILES

The State Science and Technology
Commission of the People's Republic of China
All-China Women's Federation

United Nations
Department of Economic and
Social Development

United Nations International
Research and Training Institute for
the Advancement of Women

United Nations
Department of Economic
and Social Development

中华人民共和国国家科学技术委员会
The State Science and Technology
Commission of the People's
Republic of China

United Nations
International Research and
Training Institute for the
Advancement of Women

中华全国妇女联合会
All-China Women's Federation

INTERREGIONAL WORKSHOP ON THE ROLE OF WOMEN IN ENVIRONMENTALLY SOUND AND SUSTAINABLE DEVELOPMENT

1992 · 9 北京

妇女在环境和持续发展中的作用国际研讨会

VOLUME II

PROJECT PROFILES

Interregional Workshop on the Role of Women in Environmentally Sound and Sustainable Development

Beijing, People's Republic of China
9-15 September 1992

Message of the Secretary-General

I would like to convey my greetings and best wishes to all the participants at this Seminar on the Role of Women in Environmentally Sound and Sustainable Development, and to express my warm appreciation to the Government of the People's Republic of China, and in particular to the State Science and Technology Commission and to the All-China Women's Federation, for hosting this meeting.

It is a matter of deep satisfaction to me that this workshop, coming so soon after the United Nations Conference on Environment and Development, is devoted to the theme of women and sustainable development. In every region of the world, the experience, knowledge, time and energy that women have dedicated to resources management has been crucial in sustaining community well-being. Their contributions to environmental management can be witnessed in countless success stories which are gaining international attention, and which can be used as models for others to follow. Indeed, there can be no sustainable development without taking due account of the critical role played by women in alleviating environmental degradation. Their experience, perceptions, and involvement represent invaluable assets in our quest for sustainable development. I therefore strongly believe that their considerable and significant efforts should be widely acknowledged and financially supported.

China, as the venue for the 1995 Women's Conference, which will coincide with the Fiftieth Anniversary of the United Nations, is a most appropriate host for this meeting. As a Member State which has demonstrated on numerous occasions its commitment to the goals of the United Nations and to the strengthening of the role of women in achieving sustainable development, and as a nation with a wealth of experience and talent, China is particularly well placed to contribute significantly and substantively to the outcome of this workshop.

I wish you all success in your deliberations.

Boutros Boutros-Ghali

READEX
FICHE

FOREWORD

The Interregional Workshop on the Role of Women in Environmentally Sound and Sustainable Development was convened by the United Nations Department of Economic and Social Development (DESD), in cooperation with the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW), and in association with the State Science and Technology Commission and the All-China Women's Federation of the People's Republic of China. The workshop, convened in Beijing from 9-15 September 1992, was the first concrete follow-up to the United Nations Conference on Environment and Development (UNCED) in the programme areas on women, environment and sustainable development.

The workshop was attended by over 100 women and men from some twenty developing countries, including 46 participants from China, who are carrying out activities at all levels in their own countries in support of strengthening the role of women in sustainable development. A number of participants represented governmental and non-governmental organizations, as well as donor agencies. Twelve major UN agencies and organizations were also represented.

Experience has repeatedly highlighted the difficulties and impediments inherent in securing funding for programmes in support of women in development, particularly at the grassroots, community level. During the course of the Workshop, it was noted by organizers and participants alike that that (a) women in developing countries lack the required skills and experience in preparing technical cooperation programmes which will respond to their needs; and (b) women's organizations, particularly at the grassroots level, do not have a clear idea as to how to identify sources of funding appropriate to the activities they wish to undertake, and do not know how to approach donor organizations. Thus, some of these proposals are well developed, while others are rudimentary in presentation and substance. This Workshop, in bringing together women and men who are professionals experienced both in mainstream activities and in launching grassroots programmes, attempted to set the stage for strong future interaction to enable women in developing countries to become fully involved in an environmentally viable development process. It is hoped, therefore, that the project profiles will be seen as an incentive for the international community to address some of the main issues of Agenda 21, and to launch the development of substantive programmes on women, environment and sustainable development.

The agenda of the workshop focused on methodological approaches toward strengthening the role of women in sustainable development, and directed attention to the issues of women and population, women as environmental managers and decision-makers, the role of women in the development of natural resources, with emphasis on water related sustainable development, on the use of new and renewable sources of energy, and on small-scale mining.

The main purpose and outcome of the workshop was the development of concrete and replicable project proposals based on the main recommendations of the Nairobi Forward-Looking Strategies for the Advancement of Women Until the Year 2000, and on some of the significant issues raised in Agenda 21, including the protection and supply of fresh water resources, combating desertification, promoting sustainable agriculture and rural development, promoting education and training, strengthening the role of business and industry, strengthening the role of farmers, management of waste and technology transfer. Of particular interest were the case studies and proposals presented by the Chinese participants, which covered a wide range of environment-related topics, which could easily apply to a number of other countries- traffic noise pollution, environmental education, marine hazard reduction, bio-technology, protection and conservation of water through drip irrigation, afforestation, waste water treatment, and environmentally sound mineral exploration, among others.

During the workshop the participants divided into four working groups: the first group developed policy guidelines and methodological approaches for action at the programme and project levels, which are reproduced in this volume; and the three remaining groups reviewed and elaborated some 70 development programmes, a number of which were submitted by UN agencies and organizations, governmental and non-governmental organizations, institutions and individual participants. The second working group addressed project profiles in five major areas: protection of the quality and supply of fresh water resources; application of integrated approaches to the development, management and use of water resources; managing fragile ecosystems: combating desertification and drought; promoting sustainable agriculture and rural development; combating deforestation; protection of the oceans and coastal areas. The third working group analyzed project proposals in three major areas: human settlements; statistics and data collection; and information and communication. The fourth working group reviewed project proposals in seven clusters: promoting education, public awareness and training; strengthening the role of business and industry; strengthening the role of farmers; environmentally sound management of solid waste and sewage-related waste; environmentally sound technology (transfer, cooperation and capacity-building); science and sustainable development; and the science and technology community.

Funding is being sought for these project proposals. Many will require further substantive elaboration and modification, since "women, environment and sustainable development" is a relatively new programme area. The name of the individual and/or organization responsible are included in each project profile.

Greater efforts will be needed from the international community to ensure that this crucial issue is given increasing attention and financial support, particularly in view of the forthcoming Fourth World Women's Conference: Equality, Development and Peace, to be held in Beijing, People's Republic of China, in September 1995.

United Nations
Department of Economic
Social Development
(UNDESD)

United Nations
International Research
and Training Institute
for the Advancement of Women
(INSTRAW)

Interregional Workshop on the Role of Women in Environmentally Sound and Sustainable Development

Beijing, People's Republic of China
9-15 September 1992

GUIDELINES FOR ACTION AT THE PROGRAMME AND PROJECT LEVEL

The Interregional Workshop endorsed fully the recommendations on women, environment and development in the Nairobi Forward-Looking Strategies for the Advancement of Women, in Chapter 24 of Agenda 21, the programme of action resulting from the United Nations Conference on Environment and Development (Rio de Janeiro, June 1992) and the Global Assembly on Women and Environment (Miami, November 1991). These are incorporated by reference in the following Guidelines for Action at the Programme and Project Level.

1. As stated in the Rio Declaration of 1992, "Women have a vital role in environmental management and development. Their full participation is therefore essential to achieving sustainable development". All existing and future environmental guidelines formulated by national and international donors, such as UNDP's Handbook and Guidelines for Environmental Management and Sustainable Development, and those relating to the Global Environmental Facility, should clearly state the role and capacity of women in environmentally sound and sustainable development, as a basis for allocating budgetary and human resources and for identifying objectives and relevant indicators in an action-oriented framework.

2. Towards this end, it is recommended that in post-project evaluation, the effectiveness of the project be measured. Criteria should be established and promulgated through UNDP and donors to the effect that a designated percentage of all funds for programmes and projects related to sustainable development be allocated directly to support women's involvement, their concerns and priorities in environmental issues.

3. Women's traditional and professional knowledge, as well as practical experience in relation to environmental management, must be recognized, valued and incorporated at all phases of project development and implementation. The Global Assembly on Women and Environment demonstrated women's workable solutions to sound environmental management. These, and other existing examples, should be used as new models for sustainable economic development. In formulating environmental management strategies, women "knowledge leaders" in local communities, professions and governments, must be identified and their knowledge utilized.

4. Given women's multiple roles, a multisectoral and integrated approach to their participation in sustainable development should be seriously considered and supported fully.

5. A consultative, participatory approach is necessary for discussions and negotiations on the design, implementation and evaluation of innovative projects and programmes for sustainable development. Consultation with women at all stages and levels will lead to their commitment at programme and project level.

6. An information exchange network to disseminate information on gender issues related to programmes and projects dealing with the environment and development should be supported by an organization or jointly by several organizations of the United Nations system. An information knowledge based system, to be called "Women Knowledge 21" is to be developed at national, regional and international levels to ensure that experiences gained by the women's movement in environmentally sound and sustainable development be fully utilized and applied as a basis for programme design and throughout the project cycle.

7. All environmental impact assessments (EIA) should be "gender sensitive", based on data that are gender specific; this dimension should be required for acceptance of any EIA.

8. All training and education related to sustainable development programmes and projects must address women's roles and gender issues as a pre-condition to development success, and must include women participants. Furthermore, relevant training efforts should be conducted simultaneously at donor, government, institutional and local levels for synergistic results.

9. Countries from both North and South should make concerted efforts to reduce wasteful consumption of resources, and at the same time support women's right to family planning. A broad dissemination of information aimed at women, as well as men, is required.

10. Technological options which are environmentally clean and sound should be identified, introduced and promoted, with the participation of women. Women should be involved in the decision-making on which technologies are appropriate and replicable.

11. Every effort should be made to recognize and utilize the untapped potential of women entrepreneurs in the management of programmes and projects on environmentally sound and sustainable development. This should be part of any promotion of the private sector's role in programme and project implementation.

12. Programmes and guidelines related to women and sustainable development should be action oriented, but should allow time for reflection, consultation, monitoring and evaluation, consolidation and diffusion of lessons learned, and adaptation.

VOLUME II

PROJECT PROFILES

CONTENTS

Page

I Water Supply and Sanitation

Women in the Use of Solar Energy for Sustainable Water Supply....2

Promoting Women's Role and Participation in Environmentally Sound and Sustainable Water Management....6

Women in the Application of Handpumps for Sustainable Water Supply....9

Promoting Women's Role and Participation in the Effective Use of Solar Energy for Sustainable Rural Water Supply....12

Pilot Women's Project on Solar Powered Water Pumping System for Rural Water Supply....16

Women in the Use of Wind Energy for Sustainable Water Supply....21

Women, Water Supply and Sanitation....28

Providing Ethnic Women with More Control over Water Resources and Settlement Planning....31

Role of Women in Water Management....34

A Study on the Shortage of Water Resources in North China....38

Role of Women in Research and Development of Wastewater Treatment....40

CONTENTS (Continued)

II Energy

Women and Energy: Information Centre....................44

Solar Cooking Technology................................50

Women, New and Renewable Sources of Energy.............52

International Demonstration Base for Rural Household Energy Technical Training in Hang Zhou City of Zhejiang Province..................55

Natural Resource Management in the Comoe and Kenedougou Provinces (UNSO/BKF/91/X01)..............57

Energy Sources and Cooking Practices: Effects on Women's Health....................................61

Role of Women in the Protection of the Atmosphere through Promotion of New and Renewable Sources of Energy (NRSE)......................63

Development of Firewood Stove in Rural Areas............70

Promotion of Solar Cooking Technology for the Protection of the Atmosphere....................72

Introduction of Improved Stoves for Women...............75

International Conference of Women Municipal Leaders on Improvement of the Urban Environment and Protection of the Atmosphere........................78

III Rural Development/Agriculture

Promoting Women in Agriculture: An Exchange of Experiences Between East European Women and American Women....................................82

Arresting Deforestation by Introducing Women Farmers to Animal Traction........................89

A Guide to Growing and Marketing of Medicinal Plants and Products....................................92

Market Gardening Production and Market Gardening Opportunities in an Ecologically Sound Environment......95

Unlocking Socio-economic Structures to Improve Rural Women's Productivity...................97

CONTENTS (Continued)

Ecologically Sound Market Gardening Enterprises........100

Feeding the Cities.....................................102

Women and Pesticides - Training and Education..........103

Pilot Village Involving Women's Participation in the Development of Ecologically Sound Agriculture.....................................109

Role of Women in Conserving Water by Drip Irrigation...................................111

Training Women on Promoting Ecologically Sound Agricultural Techniques...........................113

Role of Chinese Women in Afforestation and Environmental Protection............................116

Strengthening Women's Capacity to Fight Natural Calamities through Ecologically Sound Agriculture.....................................119

Integrated Demonstration Model on the Role of Women in Environmentally Sound and Sustainable Development..............................121

Women, Environment and the "Information Consulting System for the Introduction of Organisms"...125

Role of Women in the Development of Biological Control Technology and Improvement of Agricultural Environment............................127

Assistance to Rural Women Engaged in Salt Processing....................................130

IV Coastal Area Management

Women and Coastal Zone Management in Developing Countries..............................136

Including Women's Perspectives in Identifying Coastal Area Resources and Data Base..................139

Including Women's Perspectives in Environmentally Sound, Sustainable and Integrated Development of Coastal Areas............................142

CONTENTS (Continued)

Ensuring Women's Participation in a Flood Action Plan..144

Promoting Women's Participation in the Package Projects of Ecological Environment Rectification.......146

Impact of Sea Level Rise in Chinese Coastal Area.......148

Strengthening the Role of Women in Reducing Marine Hazards..............................153

V Management

Role of Women from Shougang Corporation in Environmental Protection..............................157

Role of Women in the Exploitation and Utilization of Powder Ash..............................159

Problems of Women in Environmental Education...........162

Role of Women Mayors in Environmentally Sound and Sustainable Development............................164

Role of Women Involved in the Research and Development of Preventive Technology for Traffic Noise Pollution............................166

Improving Ecologic Environment in Mountainous Areas by Developing Courtyard Economy..................168

Integrated Demonstration Model on the Role of Women in Environmentally Sound and Sustainable Development..............................170

Multi-Function Technical Training for Women in Developing Courtyard Economy........................174

VI Research and Training

Training on Gender Sensitive Analysis and Evaluation of Issues Related to Environmentally Sound and Sustainable Development (ESSD)...............177

Making Women Visible - Gender Analysis of Low Technology Extractive Industries in Three Regions......182

To Supply Libraries to go on CD-ROM to Women Research Centres................................187

CONTENTS (Continued)

VII Science and Technology

Technology Assessment and Management Training Programme for Asia/Pacific Region........................190

Strengthening Women's Participation in Formulating Science and Technology Policy for Sustainable Development......................195

Information Sharing System for Women and the Environment..............................199

VIII Micro-Enterprises/Construction

Impact of Women's Participation in Credit Projects in the Development of Productive and Viable Micro-Enterprises...........................203

Integrated Development of Women in Sericulture.........208

Recycling Plastic at Neighbourhood Level: Urban Micro-Industries for Plastic Recycling Waste Management..............................216

Women in the Construction and Building Materials Sector.................................219

Assistance to Rural Women Engaged in the Production of Low-Cost Building Materials..............227

Environmental Protection of Roads and Water Transportation..................................230

IX Health

Teaching Package on Gender and Environmental Health..................................233

Health and Household Energy............................235

Women and Health.......................................238

Educational, Nutritional and Health Programmes for Children Involved in Waste Collection, and Awareness Programme for Women Involved in Rag-Picking...............................241

CONTENTS (Continued)

X Small-Scale Mining

Mobile Mining Task Force....247

Development of Small-Scale Mining....250

Assistance to Small-Scale Mining Cooperatives....253

Role of Women in the Exploitation of Mineral Resources....255

XI Statistics

A Subregional Workshop on Statistics and Indicators on Women and Sustainable Development in Asia....259

Development of Time-Use Studies and Valuation of Unpaid Contribution to Social and Economic Development....265

Training in Incorporating Gender Dimensions in Environmental Statistics....280

XII Population

Bridging Family Planning Gaps at the Village Level and Awareness Raising on Women's Rights and Roles 286

Rural Women's Time-Use Study for Enabling More Rational and Productive Use of Time....290

Relationship between Women's Fertility and Environment....294

XIII Ageing

Human Resource Management, The International Senior Corp for Environment 297

Increasing the Participation of Older Women 299

CONTENTS (Continued)

XIV Desertification

Women in the Use of Appropriate Technologies for Control of Droughts and Desertification.............304

Pastoral Community and Resource Development Project in Mandera District, Kenya, (UNSO Pipeline Project Brief - UNSO/KEN/91/X02)........306

XV Public Information

"Crucial Crises, Women's Dilemma" - A Video Production for Education of the General Public on Women's Decision Making on Survival Needs Versus Environmental Needs.............................310

Multi-Media Chain-Reaction Project For Forming Public Opinion on Environmental Ethics and Protection from the Women's Viewpoint..................312

I. WATER SUPPLY AND SANITATION

PROJECT PROFILE

Project Title:	**Women in the Use of Solar Energy for Sustainable Water Supply**
Country:	Myanmar
Sector:	Water Supply and Sanitation
Duration:	3 years
Prepared by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 474,600

1. Background and Justification

Myanmar is one of the least developed countries, whose gross domestic product is less than $207 per capita (1989). The central dry belt region of Myanmar has more than 50% of the country's population. Agriculture, the main economic activity, is largely dependent on the use of diesel powered water pumps for irrigation and water supply to meet agricultural and domestic needs. The widespread use of diesel engines resulted in the emission of a significant quantity of greenhouse gases which not only adversely affect the quality of air but also contribute to global warming. As the central dry belt enjoys a lot of sunshine throughout the year, promotion of the use of solar-powered pumps in place of diesel powered pumps will contribute to the protection of air quality and global climate, in general.

Promoting women's participation in the use of solar energy for sustainable water supply is expected to contribute towards effective institutional capacity building as well as greater local community involvement.

National capacity building efforts will be carried out mainly through development of guidelines and organization of training workshops, all of which are expected to contribute to a better understanding of global environment problems.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

The long-term development objective of the project is to contribute towards reduction/limitation of greenhouse gases through promoting the use of solar energy operated water pumps to replace diesel powered water pumps for sustainable water supply. The immediate objectives are:

i) To reduce emission of greenhouse gases by replacing diesel powered pumps with solar powered pumps;

ii) To enhance sustainable water supply in an environmentally sound manner by systematic and effective integration of women in water development;

iii) To strengthen national capacity in the use of solar energy for sustainable water supply through training and transfer of technology.

3. Institutional Framework

The Irrigation Department of the Ministry of Agriculture and Forests will be the key coordinating agency between various government ministries and agencies, and will be the Government Implementing Agency for this project. The National Commission for Environmental Affairs, which was established in 1990, is another key agency that will be involved in the project.

UNDESD and INSTRAW will provide substantive and technical assistance to the Myanmar Government in implementing the project.

The Myanmar Government will provide services of its national counterpart experts, host facilities for training workshops, local transport and secretarial facilities.

4. Activities

The project will put an emphasis on the acceleration of women's involvement as an integral part of the human resource base for sustainable water supply. It consists of four main groups of activities:

i) Development of manual and guidelines for the selection, installation, operation and management of solar-powered water pumps;

ii) Training of trainers in the use of above guidelines through the organization of training workshops and seminars;

iii) Launching of a pilot project on solar-powered water pumping system for rural water supply;

iv) Translation of guidelines and training material into Myanmar for training at the grass-root level.

UNDESD and INSTRAW will jointly provide substantive and technical assistance to the government in implementing the project. First, guidelines will be developed for enhancing women's involvement in the selection, procurement, installation, operation and management of solar powered water pumps. These guidelines will also be translated into the national language for the use of the national trainers in local grass-roots training programmes. Next, training workshops/seminars will be organized to train women trainers in the use of above guidelines.

Finally, a pilot project on solar powered water pumping system for water supply will be launched which will provide a practical demonstration of the application of guidelines and the effective participation of women in the use of solar energy for sustainable water supply. The pilot project, if proved successful, may be replicated in other areas.

5. Expected Results

Guidelines will be prepared for the selection, procurement, installation, operation and management of solar powered water pumps. Training material for training at grass-root level will be developed in the national language. Reports of workshops and seminars for training of trainers on the subject will become available. Pilot projects will be established to demonstrate the application of guidelines and effective participation of women in the use of solar energy for sustainable water supply.

After completion of the project, the government will follow-up by organizing national training courses at the grassroots level. National trainers, trained by the project, will be used. The pilot project may also be replicated in other areas with external assistance. The Evaluation Manual of the United Nations will be used to conduct a self-evaluation exercise for this project.

Tentative Time Schedule

i)	Development of guidelines on selection, procurement, installation, operation and management of solar powered water pumps in consultation with local authorities	Jun 1993-Jul 1994
ii)	Two national training workshops/seminars	1994-1995
iii)	Pilot project	Aug 1994-Dec 1995
iv)	Translation of training material into Myanmar	Aug 1994-Dec 1994

6. **Estimated Cost**

The GEF fund requested for this project will bear the cost of travel and per diem of UNDESD and INSTRAW staff members, workshop participants as well as national experts and trainers; cost of printing guidelines and reports; translating the guidelines and training material into Myanmar; conference and related facilities; and the cost of the pilot project (including equipment).

		US $
i)	Development of guidelines on the selection, procurement, installation, operation and management of solar powered water pumps;	50,000
ii)	Organizing two training workshop/ seminars in Myanmar;	150,000
iii)	Pilot project on the use of solar energy for sustainable water supply (provision of equipment and accessories, construction/ installation of solar panels and pumps, demonstration of application of guidelines, etc.);	200,000
iv)	Translation of training material into Myanmar;	20,000
v)	Administrative support	54,600
	Total	474,600

PROJECT PROFILE

Project Title:	**Promoting Women's Role and Participation in Environmentally Sound and Sustainable Water Management**
Country:	Global
Sector:	Water Supply and Sanitation
Duration:	3 to 5 years
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 420,000

1. Background and Justification

A review of the progress made during the International Drinking Water Supply and Sanitation Decade (IDWSSD 1981-1990), indicated that actual achievements had fallen short of the established targets. One of the main reasons was identified as the lack of adequate participation by women in water supply and sanitation projects which is necessary to ensure the effectiveness and sustainability of projects. Besides, the sustainability of water resources developments have been seriously hampered by the failure to take proper account of the environmental and social conditions.

Various meetings, workshops and seminars organized by UNDESD, in cooperation with INSTRAW, on the enhancement of women's participation in water supply and sanitation projects indicated that women's participation is more effective and viable in smaller projects, particularly in a rural setting, rather than in larger projects in urban settings. There was also an emphasis on the need to involve women at various stages or phases of development of water supply and sanitation projects, such as in planning and design, construction and management, and operation and maintenance.

The International Conference on Water and the Environment, Dublin, January 1992, recommended four main guiding principles for achieving environmentally sound and sustainable water development, one of which is to equip and empower women to participate at all levels in water resources programmes.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

i) To increase the sustainability and environmental soundness of water supply and sanitation projects through the promotion of women's role and involvement;

ii) To accelerate systematic and effective integration of women in water supply and sanitation projects through the development and application of appropriate guidelines;

iii) To strengthen national capacity for environmentally sound and sustainable water supply and sanitation through training, exchange of knowledge and experience, and dissemination of information.

3. Activities

A systematic and effective approach to enhance women's involvement in all the phases of water supply and sanitation projects would be to develop guidelines for integrating women's interests and role in these projects, and then follow-up by assisting the developing countries in training their nationals in the use of these guidelines through the organization of training workshops and seminars.

In view of the foregoing, the following projects are proposed to be implemented, over a period of 3 to 5 years:

1. Preparation of guidelines for enhancing women's involvement in rural water supply on:
    a) planning and design;
    b) construction and management;
    c) operation and maintenance.

2. Preparation of guidelines for enhancing women's involvement in sanitation projects:
    a) planning and design;
    b) construction and maintenance;
    c) operation and maintenance.

3. Organization of training workshops to train national experts in enhancing women's role and participation in water supply and sanitation projects.

Altogether 6 interregional training workshops on the use of guidelines for integrating women's interests and role in rural water supply and sanitation systems will be held over a period of 3 to 5 years:

i) Three in Asia, Middle East and Pacific (for 6 sets of guidelines concerning planning and design, construction and management; operation and maintenance, respectively);

ii) Three in Africa and Latin America.

Possible areas for UNDESD/INSTRAW technical assistance would be in providing technical assistance/advisory services to countries in the preparation of project documents for submission to donors; and in assisting countries with the execution of projects funded by donors.

4. **Expected Results**

In sum, a series of 6 guidelines will be published and 6 training workshops will be organized in the use of those guidelines in terms of project outputs. These guidelines will be prepared in any one or more of the developing countries expressing their interest and urgent need for assistance in the preparation and use of such guidelines.

5. **Estimated Cost**

		$ US
i)	Preparation of 3 guidelines on rural water supply and design (3x20,000)	60,000
ii)	Preparation of 3 guidelines on rural sanitation (3x20,000)	60,000
iii)	Organization of training workshops in the use of above guidelines (6x50,000)	300,000
	Total	420,000

PROJECT PROFILE

Project Title:	**Women in the Application of Handpumps for Sustainable Water Supply**
Country:	Global
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 200,000

1. Background and Justification

Despite the achievements made by the Women's Decade (1975-1985) and the Water Decade (1981-1990), there is still a great deal to be done to improve life for women, on the one hand, and safe water supply on the other, particularly in the rural areas of developing countries. As women are the main procurers and users of water and primarily responsible for hygiene and health of the family, these two areas of concern are intricately entwined.

Progress in achieving the objectives of safe drinking water supply for all and improving the status and living conditions of women has been constrained by lack of adequate progress in promoting the role and participation of women and in enhancing the capabilities (technical, organizational and managerial) of women in achieving such progress.

It is important to involve women not only because they are the main water carriers and managers but also to be sure they are involved in development - that they are the beneficiaries not only of the improved water supply but also of the new training and skills, and the new economic opportunities that development projects often offer.

The proposed project is an attempt to pool the resources (financial, technical and women-power) of governments, local communities, United Nations agencies, donor agencies and non-governmental bodies to address these concerns in an effective and co-ordinate way.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

Experience has shown that it is necessary for men and women to work together to achieve success in improving village water supply. The focus on women for this handpump project is not to treat them as "separate" from men, but to ensure their participation alongside with men. It gives due attention to their roles in procuring and managing water.

2. **Objectives**

The long-term objective of the project is to promote the role and participation of women in the development and management of water resources that will ultimately contribute to sustainable development. The immediate objectives are:

i) to increase the coverage of people served by safe drinking water supply using locally available materials and expertise on a self-sustaining basis at minimum cost;

ii) to equip rural women with the necessary technical, organizational and managerial skills to enable them to develop and manage their own water supply systems; and

iii) to improve the status and living standards of women as well as to improve the water supply and health conditions.

3. **Institutional Framework**

The project could be a joint effort of two or more of the following agencies: government, local community, United Nations agencies (UNDESD, INSTRAW, UNIFEM, etc.), international banks and donor agencies, non-governmental organizations.

4. **Activities**

i) Organize training workshops and seminars using the training modules on women, water supply and sanitation developed jointly by UNDESD, INSTRAW and ILO Turin Centre to impart basic knowledge and skills to women in this field;

ii) Develop manual and guidelines for the installation, operation and maintenance of handpumps. The manual should contain at least the following topics:

- List of available handpumps, their characteristics, strong and weak points with regard to different physical, geographical, economical and technical aspects, approximate prices, and list of suppliers;

- Manual providing simple step by step procedures for the installation, operation and maintenance of handpumps;

- List of United Nations agencies and NGOs providing assistance to countries in this field.

iii) Launching pilot projects in selected countries demonstrating the effective application of women's technical, organizational and managerial skills in handpump projects.

5. Expected Results

- A large number of women will be trained and prepared for their greater role and participation in sustainable water supply projects;

- Countries will become self-sufficient in the number of trainers as well as training materials (manual and guidelines of the project) to launch national training workshops enhancing the role and participation of women in this field;

- The coverage of safe water supply will be increased (at least in countries where pilot projects will be launched).

6. Estimated Cost

	US$
Training workshops	50,000
Manual and guidelines	50,000
Pilot projects in two countries	100,000
TOTAL	200,000

PROJECT PROFILE

Project Title: **Promoting Women's Role and Participation in the Effective Use of Solar Energy for Sustainable Rural Water Supply**

Country: Global

Sector: Water Supply and Sanitation

Proposed by: United Nations Department of Economic and Social Development (UNDESD)[1]

Estimated Cost: US$ 200,000

1. Background and Justification

Rural women are responsible for procuring water for drinking, cooking and washing for the household. They spend a lot of time in manually lifting up and carrying water over long distances, leaving little time for education, income generation, career development and recreation. If these women could be relieved of the burden of lifting water manually from wells, through the use of solar-energy operated pumps installed and maintained by the women themselves, the quality of their life would be much improved.

In this context, the possible areas for UNDESD/INSTRAW's technical assistance are:

i) to provide technical assistance/advisory services in the preparation of a project document for submission to donors; and

ii) to assist countries with the execution of the project upon the receipt of funds.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

i) To improve the quality of life for women by easing the daily grind of hauling and carrying water;

ii) To accelerate women's participation by involving them as an integral part of the human resource base for sustainable development;

iii) To create/strengthen the institutional base for furthering the role and participation of women in environmentally sound water and energy development and management.

3. Activities

Activities for promoting women's role and participation in the effective use of solar energy for sustainable rural water supply is envisaged to comprise three main groups or phases of activities in one developing country as a pilot project, and to replicate in other countries, if found to be successful:

Phase I	Organization and/or identification of village-based workers and forming associations of village-based workers and women/mother clubs in countries;
Phase II	Development of manual and guidelines for use by the above associations for installation, operation and management of solar-energy water pump operated rural water supply systems;
Phase III	Training of rural women in the use of manual and guidelines for solar-energy water pump operated rural water supply systems, and launching of a women's pilot project on solar powered water pumping system for rural water supply.

Phase I Forming associations of village-based workers and women/mother clubs

This is primarily a task to be accomplished by local NGO's and governmental organizations with the support and assistance of ESA's and UN organizations. As this is both a cross-sectoral and multidisciplinary programme, experts from the fields of social development, energy and water should be involved. The activities envisaged under this phase include:

i) Conducting public awareness campaigns and soliciting support for the setting-up of associations of village-based workers and women/mother clubs;
ii) Setting-up of associations with some village water supply authorities as members;

iii) Mobilizing and arranging funds, so associations can operate independently on a self-sustainable basis.

Phase II Manual and guidelines for the selection, procurement, installation, operation and management of solar-energy water pumps and management of related rural water supply system

This task will be done by international consultants (UNDESD/INSTRAW) with the inputs and participation of local women groups and rural water supply authorities.

Phase III Training of rural women and women groups, and launching of a pilot women's project on solar-powered water pumping system for rural water supply

Organization of an interregional training workshop to train national rural women in the use of manual and guidelines. Rural women from countries of various regions will also be invited to acquaint them with the approach and guidelines, so that the project can be replicated in other countries. The main emphasis of the workshop, however, will be on training local women.

Relevant information concerning the pilot project is given under a separate sub-title following Section E "Possible areas for UNDESD/INSTRAW technical assistance".

4. Expected Results

Village-based workers will be identified and organized into associations of village-based workers and women/mother clubs in countries. Manual and guidelines for use by the above associations for installation, operation and management of solar-energy water pump operated rural water supply systems will be developed. An interregional training workshop to train women in the use of manual and guidelines will be organized.

Rural women will be trained in the use of manual and guidelines for solar-energy water pump operated rural water supply systems and launching of a women's pilot project on solar powered water pumping system for rural water supply.

Public awareness campaigns will be conducted and support solicited for setting-up of associations of village-based workers and women/mother clubs. Associations will be set up with some village water supply authorities as members.

Funds will be mobilized and financial arrangements made, so associations can operate independently, on a self-sustainable basis.

5. **Estimated Cost**

Phase I	$US
i) Launching public-awareness campaigns by local women and women groups, - local costs	10,000
ii) Setting-up of associations - local costs for meetings and missions of UNDESD/INSTRAW staff providing assistance	10,000
iii) Financial arrangements - local costs for meetings and missions of UNDESD/INSTRAW staff providing assistance	10,000
Sub-total	30,000
Phase II	
i) Consultancy fees for preparation of manual and guidelines	10,000
ii) Printing and dissemination of guidelines	10,000
Sub-total	20,000
Phase III	
i) Organization of an interregional training workshop in the use of manual and guidelines	100,000
ii) Pilot women's project on solar powered water pumping system for rural water supply	50,000
Sub-total	150,000
Grand Total for all phases:	200,000

PROJECT PROFILE

Project Title:	**Pilot Women's Project on Solar Powered Water Pumping System for Rural Water Supply**
Country:	13 Sahel Countries
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	To be determined

1. Background and Justification

The conception of the pilot project is based on the success story of sun-pumps in Haiti, reported by David Kinley, Assistant Information Adviser for the Water Decade, UNDP(1), summarized below:

The site of the successful photovoltaic powered water pumping system is located in the small village of Baie de Henne, Haiti. For the 2,000 inhabitants of Baie de Henne, the nearest water supply within 10km is a spring at the base of a 9m-high cliff which discharges directly onto the beach. At high tide the spring water mixes with the seawater and makes it unfit for animal or human consumption.

In a search for a means of lifting fresh spring water to the village, solar power emerged as the best option, taking advantage of the 360 days of sunshine which Haiti enjoys every year. Previous experiences of Haiti with handpumps had proved unsuccessful and wind pumps are not feasible because of the lack of sufficient winds.

The first step was to measure the spring's discharge to determine whether or not it can meet the village's drinking and cooking needs, estimated at 45 cu m per day. The next step was to make a reinforced concrete spring box to contain the fresh water and to keep it from being polluted by the seawater.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

To provide gravity-fed public fountains in the village, water had to be raised from the spring box to an elevated storage tank or reservoir located on top of the 9m-high cliff. A photovoltaic powered pump, involving a simple direct current system without any battery storage, alternator, controls or even on-off switches, was used to pump water from the spring box to an elevated masonry storage reservoir of 45 cu m capacity. The total suction and discharge head, including pipe losses, is about 13m. The system consists of 14 solar panels in two arrays mounted in an aluminum frame and, at full power, the panels have a peak output of 750W. The direct current from the panels drives a permanent magnet, motor driven centrifugal pump.

Water from the storage reservoir flows by gravity through a 50mm pipeline to five public fountains in the village. The main outlet valve at the reservoir is closed at about 6.00pm so that sufficient water will be stored in the reservoir and will be available at 6.00am the following day when the main valve is opened. Water is available for the people from 6.00am to 6.00pm. The only maintenance required was a periodic change of motor brushes during the period in which the system has been in operation from February 1983 to December 1985 without any problems.

The cost of the photovoltaic system was approximately $10,000 and the entire cost of the system, including spring box, reservoir pipeline and public fountains, implementing agency's personnel salaries, contributions from the community in the form of unskilled labour and locally available materials such as sand and gravel, totalled about $40,000 or $20 per capita. This low per capita cost is unusual for an all-gravity system because longer pipelines from spring boxes to fountains are usually required.

On the basis of the success of the Baie de Henne photovoltaic system, similar systems have since been installed at Mauge and Boise Mauge, two adjacent villages in the Artibonite area of Haiti. More than 10,000 photovoltaic (PV) powered water pumps have now been installed worldwide, at least half of them in developing countries.

In Mali, some 200 have been installed since 1977, many of them by a Belgian NGO, Mali Aqua Viva, which provides a 25% subsidy to villages wishing to buy a PV pump to supply drinking water for themselves and their animals and gardens. A recent study of the Mali experience covered 157 pumps totalling 220kWp. Typical installations employ a borehole with a 30-40m head, a submerged AC motor-pump set with a 1500Wp array, and one day's water storage. Installed costs were from $8 to $16/Wp.

For water table depths of 15-40m, villages with 250-3000 people, and typical consumptions of 20 litres/person daily, PV pumps had comparable or lower water costs than hand, animal or diesel pumps. PV systems had an initial cost of $35 to $60 per person inclusive of borehole, pumpset, water distribution and storage. Monitoring 66 pumps over 6 years found 37 failures, equivalent to a mean time between failures of 30,000 hours, and an average pump availability of over 99%. It has been shown by Anil Cabraal of the Meridian Corporation, USA, that, in these circumstances and contrary to conventional wisdom, per capita initial cost of PV systems is similar to, and even less than that of handpump systems, which are traditionally considered a low-cost technology. The worldwide market for PV pumps in rural areas of developing countries was estimated to be about 250MW. Following this success, the EC/SAHEL project is funding the installation of another 1040 PV pumps in 13 Sahel countries.

2. Objectives

The overall objective is to alleviate the problem for women in manually lifting up and carrying water that is to be provided for this family and domestic consumption. The more immediate objective is to set up a Solar Powered Water Pumping System for Rural Water Supply on a pilot basis in 13 Sahel countries.

3. Activities

- The pilot project may be implemented by women's groups/ associations (for execution predominantly by women) or by an association of village-based workers and women groups (for execution with equal participation by men and women);
- Women may take an active role in deciding whether or not solar power is the best option for lifting and conveying water in their village/country (considering climate, topography, etc.) based on their experience, survey, study/research and other relevant knowledge;
- Women may also decide on the source of water supply to be developed in their village: springs, groundwater or surface water;
- Women may take a leading role in estimating the village drinking and cooking needs and in determining whether the identified source can meet the estimated demand;
- Women may also decide on where, how and the number of water supply points are to be located in the village;
- Women may decide on how to raise funds for the project;
- Women may take active role in the design and construction of elevated storage tank, water supply pipe line and in installation of solar panels and pumps;

- Women caretakers may be appointed to operate and maintain the solar-powered rural water supply system, on a self-sustaining basis;

- Women and women's organizations may form an association of water users for collecting water tariff to cover maintenance costs;

- Women and women's groups may organize training workshops and seminars to transfer the knowledge and experience they have gained from the pilot project to women in other villages (or other countries), so that the project may be replicated;

- Evaluation of the project concerning its effectiveness in enhancing the role and participation of women as well as in enhancing their living standards.

Role of UN organizations

i) UNDESD/INSTRAW may provide assistance in the development of village-based associations of water users and women groups;

ii) UNDESD may assist in the design and construction of storage tanks, pipe lines and stand pipes as well as in procuring and installation of solar panels and pumps;

iii) UNDESD/INSTRAW may assist in the organization of training workshops to replicate the project in other areas;

Role of ESAs and NGOs

i) The US Agency for International Development (USAID) and Cooperative for American Relief Everywhere (CARE) had provided assistance to the Haiti National Potable Water Supply Office in the implementation of the successful solar powered water supply system. Similar assistance may be solicited from other ESAs and NGOs in the implementation of this project;

ii) ESAs and NGOs may provide funds and collaborate with concerned UN agencies in the execution of the project.

4. Expected Results

The pilot project will be implemented by women's groups/ associations and executed predominantly by the women, themselves, or by an association of village-based workers and women groups on the basis of equal participation by men and women.

Women will take an active role in deciding whether or not solar power is the best option for lifting and conveying water in their village/country based on their experience and other relevant knowledge. They will participate actively in fund raising.

Women and women's groups will organize training workshops and seminars to transfer the knowledge and experience they have gained from the pilot project to women in other villages (or other countries), so that the project may be replicated.

References

1. "Appropriate technology: Haiti Benefits from Sun-Pump Success", Article by David Kinley in World Water, December 1985, p23.

2. "Photovoltaics for Rural Electrification", a paper presented by Derek Lovejoy, Energy Resources Branch, STEENRD/UNDESD, at the International Solar Energy Society (ISES) in Reading, UK, 1992.

PROJECT PROFILE

Project Title:	**Women in the Use of Wind Energy for Sustainable Water Supply**
Country:	Global
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 200,000

1. Background and Justification

Rural women are responsible for getting the water for drinking, cooking, washing, and watering their small agricultural plots for food production. They spend a lot of time in lifting up and carrying water over long distances, leaving no time for other activities, such as education, income generation, career development and recreation. If these women could be relieved of the burden of manually lifting up water from wells, through the use of wind-energy operated pumps installed and maintained by the women themselves, the quality of their life would be improved.

In the context of rural energy requirements, water supply for domestic needs and livestock, irrigation and drainage could be considered for potential applications of wind pumps. In most situations wind pumping appears to be economical for such applications, if the mean annual wind speed is in excess of 3.0 m/s. In relation to irrigation and drainage, which are generally seasonal activities, what matters most is not the mean annual wind speed but the wind potential during the season concerned.

Historically, the most widespread application of wind pumps has been the livestock water supply and this trend is likely to persist even in the future development of wind water pumping in developing countries. Since even a modest quantity of water could sustain a sizable herd of animals, the value of water in such applications is high and therefore relatively more expensive

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

traditional wind pumps will still find their share in this market. The probability of cheaper and lighter designs of the new generation of wind pumps reaching this segment of the market would be further constrained by their performance limitations in regard to pumping head and the lack of robustness and reliability for prolonged unattended operation as is often required in such applications.

The use of wind pumps for drinking water supply may not be as widespread as for livestock water supply, but there is potentially a large market for this purpose. The economics of wind pumps in this application and other operational considerations are almost similar to those considered in livestock water supply. As water supply for domestic and livestock needs is a constant year round demand, the use of wind pumps for these applications requires persistent year round winds, which may not be a common occurrence in some countries, particularly those along the equatorial belt.

Irrigation is often a seasonal water demand and, therefore, the operational feasibility of using wind pumps for irrigation is mainly defined by the favourable match between the irrigation water demand and seasonal wind potential in the given region. Traditional wind pumps have rarely been used for irrigation in the past primarily because of large water requirements involved and also the relatively low economic value of water compared with drinking water supply. Thus, the scope for application of wind pumps for irrigation would be limited by the capital cost of the machine and pumping head. It is precisely in this field that modern light weight wind pump designs could find their place because of the comparatively lower capital cost and their satisfactory performance under low pumping head conditions.

Drainage was one of the most widespread applications of wind power in the Netherlands in the past. In Asia too, wind power was used for drainage purposes, particularly in China and Thailand where the traditional wind powered ladder pump was widely used for this purpose. The financial feasibility of the application depends on the value of output obtained from the drained lands.

2. **Objectives**

The long-term objective of the project is to promote the role and participation of women in sustainable water supply to achieve sustainable development as well as to improve the living standards of women. The immediate objectives are:

i) to improve available water supply in critical locations for agricultural and domestic use through the application of wind energy for pumping up water;

ii) to enhance the technical, organizational and managerial capabilities of women for their effective contribution to sustainable water supply;

iii) to improve the quality of life for women by easing the daily grind of hauling and carrying water;

iv) to accelerate women's participation by inviting them as an integral part of the human resource base for sustainable development.

3. Institutional Capacity

The project could be a joint effort of two or more of the following agencies: government, local community, United Nations agencies (UNDESD, INSTRAW, UNIFEM, etc.), international banks and donor agencies, and non-governmental organizations.

Possible areas for UNDESD/INSTRAW technical assistance include inter alia:

* Providing technical assistance/advisory services in the preparation of a project document for submission to donors;

* Assisting countries with the execution of the project upon the receipt of funds.

4. Activities

The proposed project for promoting women's role and participation in the use of wind energy for sustainable water supply is envisaged to comprise three main groups of activities in one developing country as a pilot project, and to replicate in other countries, if found to be successful:

i) Organization/identification of village-based workers and forming associations of village-based workers and women/mother clubs in countries;

ii) Development of manual and guidelines for use by the above associations for installation, operation and management of wind-energy water pump operated rural water supply systems;

iii) Training of rural women in the use of manual and guidelines for wind-energy water pump operated rural water supply systems, and launching of a pilot women's project on wind-powered water pumping system for rural water supply.

Forming associations of village-based workers and women/mother clubs.

This is primarily a task to be accomplished by local NGOs and governmental organizations with the support and assistance of ESAs and UN organizations. As this is both a cross-sectoral and multidisciplinary project, experts from the fields of social development, energy and water should be involved.

The activities envisaged under this group include:

i) Conducting public awareness campaigns and soliciting support for the setting-up of associations of village-based workers and women/mother clubs;

ii) Setting-up of associations with some village water supply authorities as members;

iii) Mobilization of funds and making financial arrangements so that the associations can operate independently on a self-sustainable basis.

Manual and guidelines for the selection, procurement, installation, operation and management of wind mills and wind-energy water pumps and management of related rural water supply systems.

This task will be done by international consultants (UNDESD/INSTRAW) with the inputs and participation of local women groups and rural water supply authorities.

Training of rural women and women groups, and launching of a pilot women's project on wind-powered water pumping system for rural water supply.

Organization of an interregional training workshop to train national rural women in the use of manual and guidelines. Rural women from countries of various regions will also be invited to acquaint themselves with the approach and guidelines, so that the project can be replicated in other countries. The main emphasis of the workshop, however, will be on training local women.

International cooperation in wind energy could take place along different lines depending of the specific needs and circumstances in each country. Sharing of knowledge among the countries would, however, be a common desire of most developing countries, because of their limited financial, technological and manpower capabilities in different spheres of science and technology. As a result of research work carried out by research institutions over the past fifteen years, there is an abundance of scientific literature on the subject of small-scale wind energy. Transfer of this knowledge through compilation of scientific literature should be considered an area that deserves special attention. This however needs formal negotiations with institutions concerned.

Another area, which deserves attention, is the commercial aspect of regional cooperation in wind energy, which falls in line with the economic cooperation between developing countries (ECDC) concept. Due to the great diversity of the technological infrastructure among the regional countries, there might be limitations in the capacity of individual countries for achieving self-reliance in the wind pump hardware development. Besides technical limitations, there might also be situations of limited market potential for wind pumps in some countries, which makes local manufacture too costly. Thus, there seems to be some justification for inclusion of the marketing element within regional cooperation.

Over the years, there has been a gradual build-up of expertise in wind energy within countries in the region. Accordingly, there is scope for exchange of expertise for the benefit of wind energy development in the regional countries. Due to the existence of strong social and cultural similarities among the regional countries, experts from the region might be able to help each other with a greater understanding of the specific country situations.

One of the factors impeding the commercialisation of wind pumps is the lack of reliable data on the system performance and reliability. Past experience had adequately highlighted the need of standardised methods and sophisticated instrumentation in order to obtain reliable and long-term data for meaningful analysis of the performance of wind pumps under field conditions. Such facilities are expensive ad are not available in most countries in the region, except China and India. Therefore, sharing of research and test facilities would greatly contribute towards the upgrading of the wind pump technology available in some regional countries.

Last, but not the least important element in international cooperation is the training of personnel involved in wind energy projects in respective countries. Training could be effected through seminars, workshops and theoretical/practical courses on wind energy.

5. Expected Results

A large number of women in developing countries will be trained and prepared for their greater role and participation in sustainable water supply and energy development projects.

Countries will become self-sufficient in the number of trainers as well as training material (manual and guidelines of the project) to launch national training workshops enhancing the role and participation of women in this field.

The availability of water supply of acceptable quality will be increased (at least in countries where the pilot projects will be launched) for household use as well as for food production.

6. **Estimated Cost**

	Group 1 Activities	$US
i)	Launching public-awareness campaigns by local women and women groups, local costs	10,000
ii)	Setting-up of associations - local costs for meetings and missions of UNDESD/INSTRAW staff providing assistance	10,000
iii)	Financial arrangements - local costs for meetings and missions of UNDESD/INSTRAW staff providing assistance	10,000
	Sub-total	30,000
	Group 2 Activities	
i)	Consultancy fees for preparation of manual and guidelines	10,000
ii)	Printing and dissemination of guidelines	10,000
	Sub-total	20,000
	Group 3 Activities	
i)	Organization of an interregional training workshop in the use of manual and guidelines	100,000
ii)	Pilot women's project on solar powered water pumping system for rural water supply	50,000
	Sub-total	150,000
	Grand Total for all groups:	200,000

Note: An Overview on Status of Technology Concerning the Application of Wind Energy to Water Pumping

The revival of wind energy utilisation in the post "oil crisis" period essentially addressed the development of a new generation of wind pumps. Criteria which guided these attempts were the ability to manufacture the new wind pumps in developing countries and their low-cost availability for the rural people. In most developing countries, wind energy programmes received considerable financial and technical support from industrialised countries. From 1976 to 1989, the Government of the Netherlands made significant financial contributions towards research on wind energy, with special emphasis on developing country applications.

The approach to technology development has varied over time. In the early stages, there was a general tendency to oversimplify designs with the hope of achieving "low-cost" wind pumps. But, many such efforts met with disappointing results. However, some groups, such as the Consultancy Services for Wind Energy in Developing Countries (CWD) in the Netherlands and IT Power in the United Kingdom, adopted a more professional approach, which seems to have contributed, largely, to the current state of wind pump technology. An important achievement in this connection, more than wind pump designs, is the large amount of basic research that has been undertaken in the field of wind pumping.

Wind energy research activities in China, also, achieved high standards due to the support of advanced research facilities and effective coordination between wind energy groups, aero- dynamic research institutes and agricultural machinery industries.

Review of wind pumping applications on a worldwide scale has been a difficult task due to shortage of published material. Current information on the subject essentially deals with the developments in wind energy which took place after the "oil crisis" and sparked off, once more, the interest in renewable sources of energy in general. Most wind energy programmes, which came into being during this period, emphasized the development of a new generation of wind pumps specifically designed for local manufacture and application in developing countries. This trend, therefore, seems to have overlooked the progress of wind pumping in countries, where wind pumping is still being practiced using the traditional classical wind pump or other indigenous designs.

Wind powered ladder pumps, for example, have been used for low lift pumping while, in Thailand, thousands of simple wooden windmills are reported to have been used, in the early 1950s, for irrigation purposes. Sail clothed Cretan windmills (Greece) and wind pumps (Peru), made out of locally available materials, are other examples of wind power use in developing countries.

PROJECT PROFILE

Project Title:	**Women, Water Supply and Sanitation**
Country:	Asian Countries
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	United Nations International Research and Training Institute for the Advancement of Women (INSTRAW)[1]
Estimated Cost:	US$ 101,700

1. Background and Justification

INSTRAW, in co-operation with UN/DESD and ILO-TURIN Centre, elaborated a training methodology based on a modular programme for the training of trainers. This innovative approach, related to selected aspects of women and development, involves the design and testing of training material, both printed and audiovisual, prepared as separate training modules. It illustrates the current concerns with practical and learned-centred training, as a departure from conventional methods.

The modular approach may be used for specific sectoral training programmes or could be used to promote general awareness on women and development issues. It incorporates components to guide trainers in planning, preparing and consulting in training and/or sensitization sessions that respond to a variety of national or local training situations. Therefore, prototype modules are designed, adapted, revised and translated for use of different settings.

The multi-media training package on "Women, Water Supply and Sanitation" comprised of a series of training modules and of sub-modules with independent instructional units which must be used separately or in conjunction with, for example, trainers' guide, participants notes, draft lesson plans and other audiovisual support material. The modular approach will facilitate the use of the material within a wide range of learning situations and with audiences at different levels. Hence, the material may be used to complement orientation/awareness sessions on aspects of women's training courses/workshops/seminars dealing with technical aspects of the development, management and maintenance of water systems. It could also be included in the training of technical assistance experts and volunteers.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: 1-809-685-2111; Fax: 1-809-685-2117.

2. Objectives

The long-term development objective of the project is to contribute to a new approach in the organization and management of environmentally sustainable Water Supply and Sanitation (WSS) programmes through the integration of women's needs as well as their participation in planning, maintenance, assessment and implementation of technical operations in projects. The more immediate objectives are:

i) to expand the institutional and infrastructural base for supporting women's involvement in water programmes and projects;

ii) to establish cadres of trainers (female and male) trained in the identification and elaboration of appropriate WSS projects, taking into account the available resources and local needs with special reference to woman;

iii) incorporate new issues and trends in water resources development planning and women's role in financial management and environmental protection.

3. Activities

The primary function of the project is training and impact analysis; its secondary function is institution building and sensitization. The project methodology is based on the creation of a dissemination system through the training of a core group of "trainers/animateurs". The training will be based on flexible, modular training courses.

The multi-media training package will be used during a sub-regional workshop in Asia and addressed to senior officials of Ministries of Education, Health, Planning and Development, and provincial or local authorities in charge of water supply as well as to other relevant institutions. Participants will be agents who will ensure dissemination of the new approach towards women's involvement in water projects. The training package covers the following areas: the International Drinking Water Supply and Sanitation Decade (IDWSS) and beyond; Participation of Women in Planning Choice of Technology and Implementation of Sustainable Water Supply and Sanitation projects; Role of Women in Hygiene Education and Training Activities for Water Supply and Sanitation Projects; Involvement of Women in Management of Water Resources, Water Supply and Waste Disposal; and Evaluation and Monitoring of Water Supply and Sanitation Projects, and the Role of Women.

4. Expected Results

A sub-regional training seminar on women, water supply and sanitation will be organized. A sub-regional training seminar will be organized by INSTRAW and UNDESD in Asia using the training package. The seminar will be attended by representatives of water sectors in charge of programmes and projects, relevant women's organization and non-governmental organizations in selected countries.

5. Estimated Cost

	Sub-regional training seminar (5 days)	US$
*	Travel and subsistence for 30 participants	45,000
*	Local direct costs (transportation conference material, communications, administrative matters	50,000
*	Project personnel: on staff member from INSTRAW, one from DESD and resources persons	35,000
*	Editing and production of report	3,000
*	Miscellaneous	2,000
	Total	90,000
	Administrative Support 13%	11,700
	GRAND TOTAL	101,700

PROJECT PROFILE

Project Title:	**Providing Ethnic Women with More Control over Water Resources and Settlement Planning**
Country:	People's Republic of China, Indonesia, Philippines, Sri Lanka
Sector:	Water Supply and Sanitation
Duration:	18 months
Proposed by:	Food and Agriculture Organisation of the United Nations (FAO)[1]
Estimated Cost:	US$ 200,000 per area

1. Background and Justification

At our roots lie a considerable treasure of experience. Over the ages, populations have developed technologies and art which have revealed a relatively advanced state of development. As an example, the Andean artifacts in South America were developed using an advanced chemical technique which resulted in simulated gold electroplating.

There is now an increasing recognition among scientists on the value of local experience and knowledge. In examining sustainable development, it is essential to look back at the know-how of our ancestors as we develop modern technologies. FAO studies have indicated that the Asia-Pacific Region has reached or surpassed the safe limits for the horizontal expansion of agricultural production (FAO has data on 22 countries in the region).

2. Objectives

The overall objectives are to use insights gained from indigenous systems; and to focus on community participation and bring in women's own initiatives in dealing with problems. The more specific objectives are:

i) to address the twin problems of land scarcity and population pressures by intensifying agricultural production on a more or less fixed land resource base;

---

[1] Contact: Ms. Dale Campbell, Programme Officer, FAO Representative Office, Beijing, People's Republic of China. Tel: (86-1) 532-2835; Fax: (86-1) 532-5042.

ii) to assess if this vertical growth in agricultural production and even the land resource base itself can be maintained in a sustainable and environmentally sound manner in the face of widespread land degradation;

iii) to support activities towards rational settlement planning with a balanced focus between household production and water needs.

3. Activities

While the emphasis on soil conservation, reforestation, water-management and fertility control has been a useful development strategy, it is necessary to orient activities towards rational settlement planning with a focus on a balanced perspective between household, production and water needs; and insights gained from indigenous systems. The area specific focus on settlement, with community participation, enhances women's initiatives and profile.

Activity	Responsible	Site	Duration/month
1. Project Development/Document	FAO	Countries	Months 1-3
2. Local counterparts determined by	FAO	Countries country	Months 1-3
3. Hiring of Int'l/ local consultants	FAO	FAO country (Rome)	Months 4-5
4. Development of research methodology and tools/operation planning (phase.I-draft; phase II-workshop)	FAO Country (Inter-country)	One country in region	Phase.I-Month.6 Phase,II-Month.7
5. Research	FAO Implementors		
6. Workshop	FAO Countries	One country in region	Month 15
7. Development/Reproduction of communication tools for advocacy.	FAO		Month 16-17
8. Advocacy workshops/ project development (in each country)	FAO		Month 18
9. Terminal report ment/Documentation	FAO		Month 18

4. Expected Results

Activities would have been oriented towards more rational settlement planning with focus on a balanced perspective between household and production and water needs; and insights gained from indigenous systems would have been taken into consideration. Activities would have focussed on settlements with a focus on community participation bringing together women's own initiatives and providing a higher profile.

The problems of land scarcity and population pressures would have been addressed through the vertical growth in agricultural production; and the land resource base itself would have been maintained an sustainable and environmentally sound manner, thus arresting the widespread land degradation.

PROJECT PROFILE

Project Title:	**Role of Women in Water Management**
Country:	People's Republic of China
Sector:	Water Supply and Sanitation
Duration:	3 years
Prepared by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US $339,000

1. Background and Justification

A review of the progress made during the International Drinking Water Supply and Sanitation Decade (IDWSSD - 1981 to 1990) indicates that actual achievements have fallen short of the established targets. One of the main reasons for this is the lack of adequate levels of women's participation in water supply and sanitation projects that is necessary to ensure the effectiveness and sustainability of the projects. Besides, sustainability of water resources developments and sanitation facilities have been seriously hampered by failure to take proper account of environmental and social conditions. Protecting water resources through promoting environmental soundness and sustainability of WSS projects at the household and country levels will contribute to the protection of international waters.

Environmental protection is one of the primary national concerns in the sustainable development of natural resources, particularly water. Various studies and experience elsewhere have indicated that greater participation by women has resulted in increased environmental protection as well as sustainability of development projects. The project is also expected to contribute to social development and human resources development of the country.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

The long-term development objective of the project is to contribute to the protection of international rivers through institutional and capacity building with emphasis on the enhancement of the role and participation of women in environmentally sound and sustainable water management. The immediate objectives are:

i) To increase the sustainability and environmental soundness of water supply and sanitation projects through the promotion of women's role and involvement;

ii) To accelerate systematic and effective integration of women in water supply and sanitation projects through the application of appropriate guidelines and training modules;

iii) To strengthen national capacity for environmentally sound and sustainable water management through training, exchange of knowledge and experience, and information dissemination.

3. Institutional Framework

The State Committee on Science and Technology will be the key agency coordinating between various government ministries and agencies as well as the Government Implementing Agency for this project. Other national ministry and agency to be involved are Ministry of Water Resources and All China Women's Federation.

UNDESD and INSTRAW will provide assistance to the Chinese Government in translating the training modules into Chinese, developing the guidelines and in conducting the workshops and seminars.

The Chinese Government will provide the services of its national counterpart experts, host facilities for training workshops, local transport and secretarial facilities.

4. Activities

A systematic and effective approach to enhance women's involvement in all the phases of water supply and sanitation projects would be to develop guidelines for integrating women's interests and role in these projects, and then follow-up by assisting the developing countries in training their nationals in the use of these guidelines through the organization of training workshops and seminars.

In July 1991, UNDESD, INSTRAW and ILO (Turin Centre) had jointly developed a multi-media training package (also called modules) on women, water supply and sanitation that covers the following areas: The International Drinking Water Supply and Sanitation Decade (IDWSSD) and Beyond; Participation of Women in Planning, Choice of Technology and Implementation of Sustainable Water Supply and Sanitation Projects; Role of Women in Hygiene Education and Training Activities for Water Supply and Sanitation Projects; Involvement of Women in Management of Water Resources, Water Supply and Waste Disposal; and Evaluation and Monitoring of Water Supply and Sanitation Projects, and the Role of Women.

In order to enable the Chinese trainers to conduct national training courses on a self-sufficient basis, these training modules will be improved and updated in line with the outcome of the UNCED, Agenda 21 and the recommendations of the Workshops on Testing of Training Modules held at the Gambia, September 1991, and Thailand, September 1992, and then translated into Chinese; in addition, training to national trainers by UNDESD and INSTRAW staff will be provided.

Guidelines will be prepared for enhancing women's involve-ment in water supply and sanitation projects, intended for use by policy makers and decision makers, not only in China but also in other developing countries.

5. **Expected Results**

Chinese language version of the training modules on women, water supply and sanitation will be developed. Guidelines will be drawn for enhancing women's involvement in water management. Reports of the workshops and seminars will become available.

This project, if proved successful, will be followed-up by national training courses on promoting the role and participation of women in water supply and sanitation on a self-reliant basis.

The Evaluation Manual of the United Nations will be used to conduct a self-evaluation exercise for this project.

Tentative Time Schedule

i)	Translation of training modules into Chinese	Jun 1993-Jul 1994
ii)	Development of guidelines for enhancing women's participation in water supply and sanitation projects	Sept 1994-Feb 1995
iii)	Two national training workshops/seminars	1994-1995

6. **Estimated Cost**

The GEF fund requested for this project will bear the cost of travel and per diem of UNDESD and INSTRAW staff members as well as national experts and trainers; the cost of printing guidelines and reports; and the cost of the conference and related facilities.

		US $
i)	Translation of UNDESD/INSTRAW/ILO training modules on women, water supply and sanitation into Chinese	50,000
ii)	Development of guidelines on enhancing women's involvement in water supply and sanitation projects	50,000
iii)	Organizing two training workshops/ seminars in China	200,000
iv)	Administrative support	39,000
	Total	339,000

PROJECT PROFILE

Project Title:	**A Study on the Shortage of Water Resources in North China**
Country:	People's Republic of China
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	Chunzhen Liu, Chief Engineer of Hydrologic Forecasting and Water Control Centre MWR[1]
Estimated Cost:	To be determined

1. Background and Justification

Northern China is deficient in water resources and unsuitable to the development of a social economy. Since mid-1960's, the climatic warming and drying made the crisis of water resources in the region even more apparent with decreased water quantity and deterioration of water quality. Consequently, the quality of health, especially for women and children, was affected. In sum, the shortage of water is one of the important factors that restricts the sustainable development of the social economy. Women are important providers and users of water as well as guardians of the living environment. Therefore, it is necessary to equip and empower them to participate at all levels of water resources programmes.

2. Objectives

The long term objectives are to sensitize the government and to ensure that the water environment problem receives increased attention, so an improved co-ordination is established between water-related activities, environment and sustainable development.

---

[1] Contact: Chunzhen Liu, Chief Engineer of Hydrologic Forecasting and Water Control Centre MWR, C/O Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O.Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 extn. 916 or 917; Fax: (86-1) 8428175 or 8014854.

3. **Activities**

a) To organize scientific research on the influence of climate change on the hydrologic cycle and water resources, and response strategies.

b) To train consultants in technology and maintenance advisory.

c) To propagate, mobilize and allocate funds.

d) To implement national regulations, such as the water law, the law of the soil and water conservation, the law of the water pollution preventing and controlling, etc.

Women scientists will play important role in this research. Through the practice of on-the-spot investigation, the analysis of data and development of models, woman's participation in decision-making and management of water resources will be enhanced, thereby, making a significant contribution to enhancing people's consciousness of water disaster and water safeguarding. However, certain obstacles to the implementation of the project are anticipated due to cultural factors and the lack of funds. For example, the misconception on water sources being "inexhaustible" contributes to wastage and pollution of water. As advanced technological methods are available to prevent water pollution and to conserve water, this information needs to be widely disseminated.

4. **Expected Results**

The warming and drying of climatic conditions, over the last 20 years, and the simultaneous increase in water demands induced changes in the hydrological cycle of North China. For example, precipitation and runoff have been decreased by -15% and -49% respectively, and groundwater level has dropped at a rate of 3-5 m/year. These changes in the hydrological cycle produces a decrease in fresh water resources, deterioration of water quality, surface subsidence in some cities and river mouth deposits. If these problems and strategic response measures are revealed, the water environment can be improved which, in turn, will impact on the overall standard of living and health of women and children.
As abundant and clean water is very important for the health and care of families and children, women will participate in the provision, management and safeguarding of water.

The project will reinforce the need to make the public aware of the "Dublin Statement on Water and Sustainable Development" to be away to public. It is necessary to strengthen international cooperation in the impact of climatic changes on the hydrological cycle and water management systems, especially with regards to the methodologies for impact assessment and response strategies.

PROJECT PROFILE

Project Title:	**Role of Women in Research and Development of Wastewater Treatment**
Country:	People's Republic of China
Sector:	Water Supply and Sanitation
Duration:	To be determined
Proposed by:	Professor Nie Meisheng, Senior Engineer, Deputy Director, Bureau of Science & Technology Development, Ministry of Construction, Government of PR China[1]
Estimated Cost:	To be determined

1. Background and Justification

As China does not have a uniform distribution of precipitation in the country over the four seasons, there is a shortage of water resource. This problem is further intensified with the development of industrialization as industrial waste water and sewage further add to the pollution. This induced the recent saturation of water pollution wherein it was estimated that nearly 80% rivers and lakes, and 50% underground water were polluted. Therefore, research projects on the development of waste-water treatment need to be developed in order to control pollution and improve the quality of environment. Moreover, women are generally involved in this area.

2. Objectives

i) To identify water pollution issues and factors that contribute to the pollution;

ii) To collect relative information and propose technical approach to control water pollution;

iii) To organize research groups and conduct the following work: research, design, monitoring, analyze, lab experiments and field study;

---

[1] Contact: Professor Nie Meisheng, Senior Engineer, Deputy Director, Bureau of Science & Technology Development, Ministry of Construction, Bai Wanzhuang, Beijing, P.R. China - 100835. Tel: (86-1) 8393411; Fax: (86-1) 8313669.

iv) To summarize the results of research and experiments, and submit final report for appraisal by experts;

v) To recommend and utilize the results of research, organize technological exchange and cooperation at home and abroad, build up engineering example of stabilization pond system.

3. Activities

During 10 years (1980-1990) this research group completed two research projects: "High concentrated organic wastewater treatment by anaerobic process" and "Research of stabilization pond system in southwest region of China". The chiefs of the research projects and 80% of the researchers were women. In the rural area of Sichuan Province, women participate in activities, such as raising pigs and fishery, which have direct impact on stabilizing ponds.

The major obstacles and sociocultural constraints anticipated are the difficulties in using the recommended new technologies because of lack of support and participation by local authorities and users, which contributes to difficult working condition in site; and the research and development grants of the project are not enough, which leads to difficulties of renewing the necessary instruments and equipments.

4. Expected Results

Before using stabilization pond system, untreated sewage was discharged to fishing ponds, that resulted in dead fish, damaged fishing production and influenced social peace. However, after the application of research results, the quality of water body improved. Therefore, more than 500 hectares fishing pond was protected which made 400 million yuan/year income. Economic stability and environmental harmony were promoted.

The impact of these results on women are evident in recent trends. Over the past 10 years (1981-1991), the number of women in research groups has been increasing, from 4 persons in 1981 to 20 persons in 1991; for instance, 2 women were promoted as senior researchers, 5 others as engineers, 4 individuals obtained their MS degree and 1 women was sent to U.S.A as a visiting scholar. In total, there were 5 papers presented in international technical conferences. All this is evidence of the important role that women play in the activities of science and technology. The project will reinforce the following research and development projects which directly relate to women's participation:

i) household refuse collection and recycling on different type of refuse;

ii) sewage treatment and reuse;

iii) indoor environmental quality;

iv) organizing technological exchange on wastewater treatment by women;

v) suggesting support some necessary instruments and equipments to the women's research group of wastewater treatment in order to continue their research work.

5. Estimated Cost

Compared to the original wastewater treatment plant, the construction cost of 0.7 million yuan and operation cost of 0.1 million yuan/year were saved by using the new stabilization ponds. Income from fish pond of 4 million yuan/year resulted from the protected stabilization pond system.

II. ENERGY

PROJECT PROFILE

Project Title:	**Women and Energy: Information Centre**
Country:	India
Sector:	Energy
Duration:	To be determined
Proposed by:	Gujarat Energy Development Agency[1]
Estimated Cost:	Rs. 22,300,000 (in lakhs)

1. Background and Justification

Experience with efforts to resolve the cooking energy crisis in India, especially in the State of Gujarat, stresses the cultural role of women who are the ones who have to cope with the physical and financial strains caused by the problems of energy; in the successful management of change in wood fuel innovations, such as afforestation, and immediate cook-stoves as also renewable energy technologies, such as biogas and solar cookers.

The enabling and disabling factors in successful and not so successful efforts emphasize the need to ensure women's involvement in planning, implementation, benefit sharing and evaluation of projects. The technical-fix approach has not worked. Projects need to draw upon the user's knowledge, skills and resources, and take into consideration the technical, economic, social and cultural specificities of the women users.

Policies and schemes fail to realise the central role played by rural women in an economic system based largely on agriculture. Over the past few decades, with the exodus of rural men to urban centres and the development of male-labour intensive industrialization, women, to an increasing extent, constitute a majority in the countryside and assume responsibilities for several traditional male domains, such as agriculture and animal husbandry. Any strategy for the protection of rural environment, if it is to succeed, must target rural women whose role in the definition and implementation of energy policies are increasingly and unanimously being recognised.

---

[1] Contact: Ms. Nandini Gandhi, Manager, Mass Communication, Gujarat Energy Development Agency, B.N. Chambers, 3rd. Floor, R.C. Dutt Road, Vadodara 390005, India. Tel: (91-265) 322855 or 320809; Fax: (91-265) 323810.

One of the major flaws in the present delivery systems is the barriers that exist between research and development and the 2productive sectors of the economy. Technology users, particularly women who at best get second hand information or none at all, do not obtain sufficient knowledge of the operating principles and potentials of the development package from extension agents who, in most instances, are inadequately informed. These women are, therefore, unable to incorporate the package into conditions and constraints of their energy system. This is specially true of energy issues which do not have established extension networks as in health, agriculture, water, etc. Likewise, inventors (researchers) and promoters do not receive sufficient information about the needs of the community/women, and the operating experiences of their laboratory products/official schemes in the field in order to carry out the necessary redesign of hardware/schemes and re-thinking of research/policy directions.

This communication barrier suppresses vital interaction between the conventional scientific training of the researcher, the national and global priorities and perspective of promoters and the 'non-conventional' indigenous expertise and special requirements of various user groups in the generation of innovations. Such interaction would ensure that innovations are appropriate to women user's needs and this, together with an increased sense of involvement and understanding of technical aspects underlying the innovation, could bring about a ready acceptance and, hence, successful diffusion of the innovation.

Since several studies indicate that energy, particularly fuelwood, is not perceived as a priority by rural women, a pragmatic approach defeats its own purpose. This, therefore, calls for an integrated approach that cuts across programme lines within the broader framework of sustainable development of rural women.

The Renewable Energy Programme in Gujarat

The state of Gurajat has played a pioneering role in the promotion of renewable sources of energy in the country. A systematic non-conventional energy programme began in the country with the inception of the Gurajat Energy Development Agency (GEDA), headquartered at Vadodara in July 1979. Subsequently, a national agency and nodal agencies at the state-level, along the lines of GEDA, have been established throughout the country to co-ordinate the promotion of renewable sources of energy. GEDA has been awarded the National Shield for the best overall performance in the promotion of renewable sources of energy for the year 1988-90. Gurajat has been awarded the shield for outstanding performance in Solar Thermal Energy for the years 1988-89 and 1989-90. The shields for the best promotion of Biogas have also been bagged by Gurajat for the years 1988-89, 1989-90 and 1990-91.

GEDA has a wide experience in the promotion of renewable energy technologies and promoting energy conservation programmes. It is a participant in many national programmes, such as the National Programme on Improved Cookstoves, National Biogas Programme, Solar Thermal Energy Programme, National Water Pumping Windmill Programme, the Integrated Rural Energy Department Programme and so on. The Agency undertakes its extension activities through networking with more than 100 national and developmental agencies. It also promotes and funds research in Renewable Sources of Energy in the state of Gurajat through its Research and Evaluation Committee. The technical departments of the Agency are supported by an Information Centre and a Rural Energy division which co-ordinates Rural Energy Programmes. The Agency has a tradition of adapting its programmes with lessons from the field and initiating R&D from operating experiences. It lines with R&D and Extension, thus providing a position from which it can facilitate interaction between the user, inventor and the promoters in the state of Gurajat and, in view of its pioneering role, influence national policies to strengthen the participation of women in energy programmes.

2. Objectives

The long term objectives are to create a Women and Energy Information Centre, under the aegis of GEDA, to strengthen the women's perspective in planning and implementation of Energy Programmes within the context of Gurajat's socio-economic, agro-climatic and cultural environs. The project aims to empower women in energy and environment issues, alleviate drudgery and foster environmentally sound and sustainable development.

To achieve these objectives, the Women and Energy Information Centre would facilitate information flow between uses, inventors, policy makers and suppliers (manufacturers and extension agents), so that programmes and technologies are designed to reflect the experiences and needs of women, and draw on their indigenous knowledge, skills, protective, healing instincts and their potential for leadership in the face of hardship.

3. Activities

The Women and Energy: Information Centre would, through formal and informal channels and forums (Let's cook together Meets and Inter-generational programmes that bring together grandmothers, mothers and daughters to share traditional knowledge and skills and learn about new technical developments in the field of energy, Research Review Meets, Information Sharing Products, Publications, Audio-visuals and so on) undertake studies to gather feedback from women on various social, technological, economic and cultural aspects as they affect energy issues/technologies/programmes, viz the domestic, agriculture and rural industry sectors. It would consolidate this information/experience and feed it forward to relevant groups to ensure that programmes/technologies relate the physical elements of design to social realities and local capabilities and are compatible with the economic constraints and the cultural ethos of various subgroups. One of the specific objectives would be to highlight research priorities in Women and Energy Technology issues.

The Women and Energy Information Centre would seek to empower women, particularly village women and deprived urban groups in energy, environment and sustainable development issues, by enhancing their scientific understanding and technical skills and their perception of wider developmental issues and, thereby, enhance future possibilities of indigenously - generated innovations and give women greater control over and involvement in the process which changes the technical basis of their lives. It would seek out success stories of women's leadership to highlight women's role in sustainable development. It would also document indigenous knowledge and skills.

A major function of Women and Energy: Information Centre would be the training and sensitization of extension agents who would deliver energy programmes to women. The development of women extension agents is crucial to reach out to women beneficiaries. This would involve development of appropriate training packages and sensitization programmes. As energy issues cut across programme lines, this would involve establishment of linkages with various grassroots organisations, development programmes, research and development activities and training groups and government agencies and departments.

The Women and Energy: Information Centre would network with other regional, national and global development groups and/or organisations to share insights and experiences and also provide information and support in women and energy and related issues.

It would undertake pilot extension projects, under various development programmes to reflect the integrated approach.

4. Expected Results

In the long run, the project will empower women in energy and environment issues, alleviate their drudgery and foster environmentally sound and sustainable development. More specifically, a Women and Energy Information Centre will be created, under the aegis of GEDA, to strengthen women's perspective in planning and implementation of energy programmes.

The Women and Energy Information Centre will facilitate information exchange. Programmes and technologies designed will reflect the experiences and needs of women, and draw on their indigenous knowledge, skills, protective, healing instincts and their potential for leadership in the face of hardship.

5. **Estimated Cost**

Manpower & Resources: Strengthening the present capabilities expertise, information resources and knowledge base of the GEDA Information Centre through:

i) Training of existing professionals of GEDA Information Centre in women's issues and enhancing their information collection/dissemination and communication skills.

ii) Resource/Collection on Women, Energy, Environment and Development issues through field and file searches.

iii) Additional expertise/professionals:
  a. Energy Scientist
  b. Information Scientist
  c. Information Analysts (2)
  d. Education and Extension (2)
  e. Communication: Development communication Expert Language Editor/Writer in Gurajat and English (3)
  f. Research Extension and Field Assistants from representative socio-cultural regions in Gurajat (6)
  g. Secretarial Help (1)
  h. Data Entry Operators (2)
  i. Publication Assistant (1)
  j. Driver (1)

iv) Hardware to facilitate access to (a) state-of-the-art reprographic and information acquiring and processing facilities, (b) use of Audio-Visual presentation techniques and (c) mobility

(v) Software Resources on Women, Energy, Environment and Development issues.

	Budget Estimates	Rs.in Lakh
A)	Capital Investments	
i)	Computer Hardware/Software	6.00
ii)	On-line System Hardware	1.50
iii)	Reprographic Equipment	2.00
iv)	Storage and Dissemination facilities for Information Centre	2.50
v)	Mobility Infrastructure	4.50
B)	Resource development	
i)	Collection of published and unpublished literature	21.00
ii)	Training/Upgrading Skills of GEDA Information Centre Professional	3.00
C)	Recurring Expenditure (annual)	
i)	Training & Sensitisation Programmes at various levels and Research Reviews Meeting	5.00
ii)	Information dissemination through development of training and sensitisation packages/programmes and information consolidation packages	20.00
iii)	Information Collection through field and file research	7.00
iv)	Salaries	11.00
v)	Liaison/Networking Expenses (Postage, Travel, Phone, Fax, etc)	3.00
vi)	Administrative Expenses	5.00
D)	Overall Budget Requirements	
	Capital Costs	22.00
	Resource Development	24.00
	Recurring Expenditure for 3 years @ 15 percent inflation	177.00
	TOTAL	223.00

PROJECT PROFILE

Project Title:	**Solar Cooking Technology**
Country:	Global
Sector:	Energy
Duration:	To be determined
Proposed by:	Ms. Roma Stibravy[1]
Estimated Cost:	US$ 103,000

1. Background and Justification

The Environmental Action Plan adopted at the UN Conference on Environment and Development, sets out measures for achieving sustainable development. Among others is the use of renewable sources of energy. Capturing the energy of the sun for universal, daily human activity, especially in the lives of women, such as cooking, meets all environmentally friendly criteria. Equally significant is lifting the burden of foraging for wood amongst women. In addition, the impact on health in traditional cooking methods is to be taken into consideration. As described in the latest World Bank report, poor people cook with wood or charcoal and the fumes can cause as much lung-damage as smoking several packs of cigarettes a day.

2. Objectives

The overall objective is to ensure a cost-efficient, easily accessible energy source which is both environmentally friendly as well as healthy for cooking and to explore the establishment of small-scale production of solar cookers. Immediate objectives are:

i) to establish community-based participatory frameworks for women who are responsible for health, nutrition and food preparation. This framework should serve to overcome socio-cultural restraints and promote the participation of women in the selection of ecologically viable technologies for household energy;

---

[1] Contact: Ms. Roma Stibravy, 491 Belden Hill Road, Wilton, CT. 06897, USA. Tel: (212) 354-4482, (212) 762-5148; Fax: (212) 575-0327.

ii) to prepare workshops and videos for community groups and schools, while also training trainers, thus imparting the technology while promoting women's self-reliance;

iii) to help establish small-scale industry for production, distribution and servicing of solar cookers, including choice of materials and financing.

3. Activities

Contacting rural community groups from two countries for each region (Asia/Pacific, Africa (East and West), Latin America and the Caribbean). Establishing conducive working atmospheres through education and communication.

Scheduling workshops of four days' duration for a maximum of thirty participants. Inviting local and regional national leaders and the media to the opening and closing ceremonies. Training participants to use solar cooking technology, train trainers for promotion and expansion of technology, and follow-up. Preparing videos for future workshops and trainers. Hiring consultants for workshops.

4. Expected Results

A video, introductory manual and training manual are to be elaborated within the framework of this prototype project.

5. Estimated Cost

i)	Elaboration of training manuals. including video	US$ 30,000
ii)	National/ regional consultant for interaction with local communities (one month)	8,000
iii)	Organization of national workshop and dissemination of results	15,000
iv)	Follow-up/establishment of local industry bases with business participation (consultant for 6 month feasibility study)	50,000
	TOTAL	US$ 103,000

PROJECT PROFILE

Project Title:	**Women, New and Renewable Sources of Energy**
Country:	Regional: Asia
Sector:	Energy
Duration:	1 Week
Proposed by:	United Nations International Research and Training Centre for the Advancement of Women (INSTRAW)[1]
Estimated Cost:	US$ 96,050

1. Background and Justification

INSTRAW elaborated a training methodology based on a modular programme for the training of trainers. It consists of both printed and audiovisual packages and illustrates current concerns with practical and learned-centred training, as a departure from conventional methods. The modular approach may be used for specific sectoral training programmes or could be used to promote general awareness on women and development issues. It incorporates components to guide trainers in planning, preparing and conducting training/sensitization sessions that respond to a variety of national or local training situations. For this reason, prototype modules are designed, adapted, revised and translated for use of different settings.

The multi-media training package on "Women and NRSE" comprises of a series of training modules or sub-modules independent instructional units which must be used separately or in conjunction with, for example, trainers' guide, participants notes, draft lesson plans, and other audiovisual support material. The modular approach will facilitate the use of the material within a wide range of learning situations and with audiences at different levels. Hence,the material may be used to complement orientation/awareness sessions on aspects of women training courses/workshops/seminars dealing with technical aspects of the development, management and maintenance of energy systems. It could also be included in training of technical assistance experts and volunteers.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Pension 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 6852111; Fax: (809) 6852117.

2. Objectives

The long-term development objective of the project is to contribute to a new approach in the organization and management of environmentally sustainable New and Renewable Sources of Energy (NRSE) systems, through the integration of women's needs as well as their participation, in planning and technical cooperation in NRSE programmes and projects. The more immediate objectives are:

i) to expand the institutional and infrastructural base for supporting women's involvement in energy programmes and projects, with specific reference to the application of NRSE technologies and approaches.

ii) to establish cadres of trainers (female and male) trained in the identification and elaboration of appropriate NRSE projects, taking into account the available resources and local needs, with special reference to women.

3. Activities

A subregional training seminar on "Women and NRSE" will be conducted. The project methodology is based on the creation of a dissemination system, through the training of a core group of "trainers/animateurs". The training will be based on flexible, modular training packages, easy to use and adapt to different target populations and local conditions.

The multi-media training package will be used during a sub-regional workshop in Asia and addressed to energy planners, experts and officials in charge of the management of energy projects and representatives of women bureaus, groups and other relevant institutions dealing with women and development issues. A group of potential users will be trained with a focus on the use of adaptation of the package. Participants will be the agents which will ensure dissemination of the new approach towards women's involvement in energy projects.

The training package covers the following areas: An Overview of the United Nations Activities on New and Renewable Sources of Energy (NRSE); Women's Position in the Energy Sector; NRSE Project and Programme: Design and Implementation; Relevant NRSE Systems: Characteristics and Technology; Education and Training Activities in NRSE projects.

4. Expected Results

A sub-regional training seminar on women and NRSE will be organized by INSTRAW in Asia in order to present the training package. The seminar will be attended by representatives of energy boards/councils in charge of project planning, relevant women's organizations and NGOs in selected countries.

5. Estimated Cost

Sub-regional training seminar (5 days)	US $
- Travel and subsistence for 30 participants	45,000
- Local direct costs (transportation conference materials, communications, administrative matters	5,000
- Project personnel: one staff member from INSTRAW,one from DESD and resources persons	30,000
- Editing and production of report	3,000
- Miscellaneous	2,000
TOTAL	85,000
Administrative Support 13%	11,050
GRAND TOTAL	96,050

PROJECT PROFILE

Project Title: **International Demonstration Base for Rural Household Energy Technical Training**

Country: Peoples' Republic of China - in Hangzhou City of Zhejiang Province

Sector: Energy

Duration: To be determined

Proposed by: Pan Yi, Rural Energy Office of Zhejiang Province and Zhejiang Research Institute for Biogas and Solar Energy[1]

Estimated Cost: US$ 350,000 annually

1. Background and Justification

Hangzhou, well known for its beautiful natural scenery, attracts international tourism. Therefore, the urban district of Hangzhou city, where the project unit is situated, is well supported by transport facilities (air, land and water).

By 1991, taking into consideration the local conditions and availability of other energy sources, the energy-saving stoves were transformed in 6,290,000 rural families. More than 6 million tons of firewood was saved per year. Biogas digesters were constructed and the biogas was utilized in 210,000 families. The solar water-heaters were installed for 30,000 families. Biogas is used for cooking, lighting, roasting tea, incubating and heating in the silkworm rooms; biogas liquid is utilized for feeding fish and soil-less planting; and the dreg is used as manure. This new rural household energy source substituted for the traditional firewood which has protected the forest and also alleviated environmental pollution caused by domestic animal dung, improved cooking conditions, saved cooking time of women and raised the level of civilization in rural areas. Women are the direct participants and beneficiaries in the development of rural household energy.

---

[1] Contact: Pan Yi, Zhejiang Research Institute for Biogas and Solar Energy, Rural Energy Office of Zhejiang Province, C/o Chen Kun, Society of Science and Technology for Social Development, 20 West Chgegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

This project proposal is mainly engaged in development, utilization, research and popularization and utilization of rural household energy, such as rural energy saving stoves, biogas, solar energy, wind energy and miniature hydropower. The institute has a strong technical advantages, favourable working conditions and reflects much experience in developing rural household energy.

2. **Objectives**

i) To provide technical directions and set up demonstration units in rural household energy for developing countries;

ii) To organize training courses on rural household energy. The course contents will include practical techniques, facilities and equipment, organization and management, planning of rural energy, its comprehensive evaluation, etc. Women will be the main trainers.

3. **Activities**

i) To select three regions from hilly areas, plains and the island areas of Zhejiang Province and establish demonstration units for rural household energy.

ii) To organize training courses on rural household energy twice a year. UNDP, UNDESD, INSTRAW and the government will send experts to participate in the training courses. The duration will be 15 days, 30 participants during each term, half of which will be women.

iii) The government will provide technical personnel in the utilization of rural household energy to other developing countries for the purpose of investigation and technical direction. Four experts, of whom two will be women, will be sent every year.

4. **Expected Results**

* Sensitization and awareness building on the use of alternate sources of rural household energy for developing countries.

* Improved planning, management and evaluation of rural energy sector at the national and provincial levels.

* Enhanced technical skills on the implementation of NRSE projects.

5. **Estimated Cost** US$ 350,000 every year.

PROJECT PROFILE

Project Title:	**Natural Resource Management in the Comoe and Kenedougou Provinces (UNSO/BKF/91/X01)**
Country:	Burkina Faso
Sector:	Energy
Duration:	5 years
Proposed by:	United Nations Sudano-Sahelian Office (UNSO)[1]
Estimated Cost:	US$ 4,654,000[2]

1. Background and Justification

Burkina Faso, a landlocked Sahelian country with an area of 274,000 km., has a population of 9.2 million (1990). Infertile soil and irregular rainfall constitute a fragile basis for the sustainable development of agricultural activities. There are neither forests nor streams worth noting. During the 1980s, the gross domestic product (GDP) rose, in real terms, at a slightly higher rate than the population (3% yearly), but at the cost of appreciable financial imbalances and continual degradation of the land. According to the 1992 UNDP Human Development Report, Burkina Faso ranks no.157 on the Human Development index (HDI). Per capita national income amounted to approximately US $ 300 in 1990, thus placing Burkina Faso among the least developed countries. In spite of these various handicaps and privations, medium-term growth prospects are relatively good. The country has just embarked on an initial Structural Adjustment Programme (SAP) supported by the World Bank and the International Monetary Fund.

The UNDP Country Programme 1992-1996 is concentrating the indicatively available resources in three selected areas, one of which is natural resource management. Prioritising this area of cooperation has been confirmed by the entire donor community, at the Geneva Round Table on Burkina Faso (May 1991). Interventions will contribute to the achievement of the following national strategic objectives: (a) preservation of the major sociological balances and improvement of the environment with a view to guaranteeing sustainable development, and (b) the satisfaction of the needs of the inhabitants.

---

[1] Contact: Mr. Firouz Sobhani, UNSO, FF-904, 304 E. 45th Street, New York, NY 10017, USA. Tel: (212) 906-6614; Fax: (212) 906-6395.

[2] The project is currently under implementation; however, equivalent funding would be required for replication elsewhere.

An ongoing UNSO project is providing institutional support to the national committee responsible for the implementation of the national plan of action to combat desertification (CNLCD). CNLCD has been the focal point in the preparation of the recently adopted National Environment Action Plan, which includes a land management programme framework as one of its main components. The World Bank is assisting a large land management programme project which provides education, training and sensitization to local populations in the test zones. UNSO is assisting two integrated rural development projects, in different socio-ecological zones, with local land management on their agenda. The project aims at the development of technical packages for improved agro-sylvi-pastoral production systems and for the protection of the vegetation cover as well as institutional models for natural resource management, at the regional and the local level. The present UNSO project is a third project of a similar approach, in yet another socio-sociological zone. Other relevant projects, in the area of natural resource management, are financed by France, Germany and the Netherlands.

In 1989, UNSO undertook a project identification mission in response to the government's request for an intervention in the Provinces of Comoe and Kendougou, in the South-East region. Agro-ecologically, this is a comparatively rich part of the country but the two provinces have experienced an excessive influx of migrants from drier areas - in Kenedougou due to the settlement of transhumants, and in Comoe following the successful control of onchocercose and tryposomoasis. Evidence indicates that this sudden increase in the local population will seriously damage the natural resource base and the government is keen to develop models for improved production systems in order to minimize the damage. A preparatory UNSO project was set up in 1990 under which extensive baseline studies have been completed.

The government is concerned about the overpressure on natural resources in the project area, which is due to the massive migration influx. The Government is also generally committed to introducing land use planning methods in the country, as reflected in the National Environment Action Plan. The request for an intervention in the Comoe and Kenedougou Provinces was addressed to UNSO, in 1989, partly as follow-up to an FAO forest reserve management project (Toumoussenl) and partly as a measure to deal with the land degradation problems.

2. Objectives

To strengthen the government department implementing the project through training and experience;

To provide an opportunity for coordination of government extension services in the region, under the auspices of the Ministry of Planning.

3. Institutional Capacity

The project will be executed by the government, through the Regional Ministry of Finance and Planning, based in Bobodioulasso, in order to integrate the activities fully with government policies and programmes. The services of UNDP/OPS will be requested for international recruitment and procurement.

Project sub-stations will be set up in the provincial capitals of Banfora and Orodars. The sub-stations will be staffed with a team of operations, including the necessary expertise required for the particular priorities of the Province.

The Government's contribution to the project will include the services of eight professionals and 40 agents, buildings, equipments and utility costs, amounting to a total contribution of F. CFA 215 million. It will provide the part-time services of in total 40 operations and extension agents from the various technical departments concerned. The project will thus provide an opportunity for coordination of government extension services in the region, under the auspices of the Ministry of Planning.

4. Activities

The project will operate in six test zones for which the specific priorities have already been suggested as a result of the UNSO preparatory project. The project programme for each one of the zones will be developed in close collaboration with the local population, and with the local and the regional authorities. Apart from technical activities, the project will also develop the institutional aspects of local level land use planning and it will assist in setting up provincial committees for the planned integration of migrants.

5. Expected Results

The project will directly benefit, the local population in the six test zones (30 villages totalling 45,000 inhabitants). The project will also strengthen the government department implementing the project through training and experience gained.

The outputs of the project will include: (a) for the test zones, an action-oriented planning framework, legally recognized land use planning committees, improved production systems, strengthened producer associations; and (b) for the two provinces, management plans for forest reserves, masterplans for forest/water/pastoral resources, demonstrated partial capability for the planned integration of migrants and an outline of provincial land use planning maps.

6. **Estimated Cost**

Inputs for the project will comprise of the following: International personal (148 person months), national professional personal (406 person months), subcontracts (for research), training, equipment, small credits and support funds, and miscellaneous.

Personal	US$ 1,969,000
Subcontracts	175,000
Training	315,000
Equipment	669,000
Miscellaneous (including credits and support funds:650,000 and unforeseen:400,000)	1,415,000
Administrative cost (OPS)	111,000
TOTAL	US$ 4,654,000

PROJECT PROFILE

Project Title:	**Energy Sources and Cooking Practices: Effects on Women's Health**
Country:	A selected country in Central America or the Andean region
Sector:	Energy
Duration:	To be determined
Proposed by:	United Nations Department of Social and Economic Development (UNDESD)[1]
Estimated Cost:	To be determined

1. Background and Justification

In 1989, there were some 88 million households in Latin America and the Caribbean, and approximately the same number of women who had to cook one or more meals per day.

The health-related effects of the combustion of the energy sources used to cook food have been amply documented. The emission of carcinogenic agents and particles in suspension increases the frequency of chronic or acute respiratory diseases. In this context, according to the World Health Organization (WHO), respiratory illnesses are currently the major cause of death in the developing countries.

In light of the more widespread poverty conditions, the economic role of women has expanded, especially in the low-income sectors. Over the last decade, the female component in the economically active population (EPA) has steadily risen and it is not difficult to find countries in which women are the heads of more than 20% of the total number of households.

The crowded conditions of urban slums, where the use of firewood persists, notably worsens living conditions in the poorest households, thus affecting both women and the small children who spend most of their time close to their mothers. This situation can also extend to middle-income brackets in urban areas, where the prolonged inhalation of the gases resulting from the combustion of LPG or kerosene, increases the likelihood of having respiratory illnesses. In the rural sector, where 20 million women cook with firewood, the situation may be even worse, due to the appearance of chronic conjuctivities. Studies carried out in India have revealed that the levels of pollution within homes were three times higher than those outside. However, in Latin America and the Caribbean, there are no data to evaluate the magnitude of this problem which may well be one of the most important causes of respiratory diseases among women in the region.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 100017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. **Objectives**

To obtain information, through medical examinations and measurements, about the effects of pollutants, emitted by the combustion of firewood, LPG and kerosene, on women's health;

To disseminate the findings and, specifically, raise the level of awareness of decision-makers on the problem.

3. **Activities**

- To select the two urban areas and three rural areas in which the study will be carried out;
- to conduct a sample survey in the selected sites;
- to measure the levels of indoor pollution (NO, aldehydes, hydrocarbons and particles in suspension);
- to analyze the clinical records of a significant sample of women who cook;
- to analyze and interpret the information;
- to publish and disseminate the findings.

4. **Expected Results**

Information will be obtained through medical examinations and measurements, about the effects of pollutants, such as those emitted by the combustion of firewood, LPG and kerosene, on women's health. The findings will be disseminated and the level of awareness of decision-makers on the problem will be raised.

PROJECT PROFILE

Project Title: **Role of Women in the Protection of the Atmosphere through Promotion of New and Renewable Sources of Energy (NRSE)**

Country: Global

Sector: Energy

Duration: 3 years

Proposed By: United Nations International Research and Training Institute for the Advancement of Women (INSTRAW)[1]

Estimated Cost: US$ 1,207,750

1. Background and Justification

The development of energy sources has become a major area of concern worldwide. It is one of the most critical issues of developmental and environmental policies. If patterns of energy production, transmission, distribution and consumption are to be sustainable, both ecologically and economically, all energy sources, particularly new and renewable sources, will need to be used in ways that respect the atmosphere and the environment as a whole. Energy demand and consumption are not isolated but rather integral parts of the economic and social structure, including overall ecosystems, deforestation, agriculture, industry, transport, services and housing.

Without development of alternative energy sources, developing countries face compounded crisis - increasing reliance on hydrocarbon fuels and continuing rapid depletion of forests, which, in turn, significantly contribute to global warming. However, the utilization of hydrocarbons can be significantly diminished by introducing economically feasible renewable technologies to exploit solar, wind, hydropower and biomass resources. The reduction of hydrocarbon fuel combustion will also reduce CO2 emissions which are contributing to the green-house effect.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 685-2111; Fax: (809) 685-2117.

Patterns of energy use is one of the major factors contributing to climate change, air pollution and ozone depletion. New information in scientific, social and economic fields has underscored the interlinkages between affected ecosystems, socio-economic factors, technical and health aspects in both developed and developing countries.

As a result, the need to provide research and training on the relationship between environmental and developmental issues, and energy and atmosphere has become a major international priority. These needs have been underlined in Agenda 21, Section II - Conservation and Management of Resources for Development, and the Convention on the Climate Change.

The consequences of inadequate energy sources are quite evident. In 1980, about 100 million people approximately in developing countries lacked sufficient fuelwood to meet their basic needs and 1.3 billion people consumed fuelwood faster than it could be replenished. Without remedial action, 2.4 billion people will either be unable to obtain their minimum energy needs or forced to consume wood faster than it will be grown by the year 2000. Women, who are directly dependent upon the natural resource base and on sustainable natural systems for the survival of their families are the most severely affected, owing to their role as collectors, disseminators, users, family educators, motivators and agents of change.

In sub-Saharan Africa, for example, where fuelwood constitutes 90% of household energy use, women often spend several hours a day fetching fuelwood. Deforestation and desertification are constraining the supply and accessibility of water, fuel and fodder, and women have to walk further each day to obtain these essential items for survival. The lack of fuel for cooking also contributes to famine.

Women as users, consumers, buyers and collectors of various sources of energy are both part of the problem and the solution. In developing countries, women have but a small share in the modern production and distribution of energy.

Since conventional energy is not easily available, they depend primarily on non-conventional as well as new and renewable sources of energy. If women are not trained and given alternative sources of energy and economic incentives, they will continue collecting and burning fuelwood to survive.

The main constraints with which women confront in achieving full integration and participation in energy-related activities are: lack of education and training; lack of participation in energy planning, programming and projects; lack of finances; and lack of choice in the various types of technologies available.

One of the major reasons for these constraints is that policy-makers, energy planners and project managers lack both a comprehensive information base on women's involvement in the sector, and the capacity to plan and implement appropriate interventions to promote women's involvement. The structuring and implementation of a well-defined policy for involving women in the energy sector is a prerequisite for environmentally sound and sustainable NRSE policies and programmes.

In many parts of the world women play a central part in resource management and yet have less access to education, training, credit, extension services and technologies than do men. Women in many countries have only limited rights, if any, to land and tree cultivation. This constraints their access to credit for investments in new, environmentally friendly technologies. In certain countries, women are prescribed from using renewable sources of energy due to cultural and religious traditions.

Women are not a new dimension in environmentally sustainable projects and NRSE programmes. It has been demonstrated that they have an important managerial role to play in relation to the environment.

In reaffirming women's critical economic, social and environmental contributions to environmental management and sustainable development, the United Nations Conference on Environment and Development (UNCED) endorsed activities promoting the incorporation of women in programme areas contained in the sectoral and cross sectoral chapters of Agenda 21 as well as in the sections on the role of major groups and on means of implementation, of Chapter 24, entitled " Global action for women towards sustainable and equitable development".

Training in new management systems in human and natural resources, new methodologies in environmentally friendly technologies and mechanisms for better operational activities are essential components for involving women in all phases of sustainable development. By training decision-makers on the need to involve women in the use and application of economically feasible and environmentally sustainable renewable energy technologies, adverse environmental impacts in climatic changes, deforestation, air pollution and respiratory-related health hazards can be greatly reduced.

INSTRAW pays particular attention to research, training and capacity-building at national and global levels to ensure the involvement of women in environmentally sustainable energy programmes and projects. The question here is how to create relevant training materials which will effectively serve the needs of both women and development planning officials who frequently exclude women from environmental and developmental processes. An important initiative in this direction is the production of innovative multi-media modular training packages. Such approaches are at the centre of INSTRAW's efforts to target development officials, trainers, engineers, women's organizations and non-governmental organizations concerned with this issues.

In 1989, in co-operation with ILO-TURIN CENTRE, INSTRAW developed a multi-media modular training package on "Women, New and Renewable Sources of Energy". The training package covered the following areas: An Overview of the United Nations Activities on New and Renewable Sources of Energy (NRSE); Women's Position in the Energy Sector; NRSE Projects and Programmes: Design and Implementation; Relevant NRSE Systems: Characteristics and Technology; Education and Training Activities in NRSE projects.

The objectives of the training package are to:

i) contribute to a new approach in the organization and management of NRSE systems through the integration of women's needs as well as their participation in planning, technical operation and maintenance, assessment and implementation of NRSE programmes and projects;

ii) increase the awareness and capability of planners, officials and experts in charge of the management of energy programmes, women's organizations and institutions on the need to involve women in energy planning, and in the development and implementation of NRSE projects.

The package contains 500 pages of training text, user's guide, module structure, pedagogical scheme, additional reading, bibliography, lesson plan, key issue checklists for group work, trainer's guide and two evaluation forms. The flexibility of this training package is assured by a parallel activity, of training different target groups simultaneously, and in using modular training material which enables users to adapt it to their own needs. The modular programme enables training in situ and provides practical "how-to" materials.

The major advantage of the modular training package is that it is a stand alone product. Clear instructions are given with each session as to the material required, so that local instructors can co-ordinate their lectures with accompanying sound-slide packages. The modules are flexible and can be adapted to specific circumstances of each local community or target group.

The training package was successfully applied at six inter-regional and national training seminars held in the Dominican Republic, Egypt, Ethiopia, Libya, Tanzania and Yugoslavia from 1989 to 1991. The training package was also translated from English into Arabic.

2. **Objectives**

The long-term objective of the project is to implement a new approach in the organization and management of environmentally sustainable and economically viable NRSE systems through the integration of women's needs while assuring their participation in planning, technical operations, maintenance, assessment and implementation of NRSE programmes and projects, in order to reduce the adverse effects on the atmosphere. The more immediate objectives are to:

i) expand the institutional and infrastructural base for supporting women's involvement in energy programmes and projects with specific reference to the application of environmentally sound and economically viable NRSE technologies and approaches in four developing countries;

ii) establish cadres of trainers (female and male) trained in identification and elaboration of environmentally sustainable and economically feasible NRSE projects, taking into account the available resources and local needs, with special emphasis on women in four developing countries.

3. **Activities**

The methodology will employ innovative training packages applied at national and international levels and the creation of a core group of trained staff. The training will be based on a flexible, modular training approach, easy to use and adapt to different target groups and local conditions. The training package will substantively cover the role of women in environmentally sustainable and economically feasible NRSE technologies that promote and more efficient energy systems to alleviate pollution. The technical portions of the training package will include characteristics and applications of environmentally sound NRSE, such as solar, wind, geothermal, hydropower and biomass, as well as the use of woodfuel resources in a manner that fosters sustainable development and minimizes environmental stress and health impacts. Practical application of specific technologies, such as solar box cookers, will be demonstrated after the training seminar.

4. **Expected Results**

OUTPUT 1: REVISION AND UP-DATE OF THE MULTI-MEDIA MODULAR TRAINING PACKAGE

The multi-media modular training package will be up-dated on the basis of the Rio Declaration, Agenda 21 and the Convention on Climate Change as well as the other materials within and outside the United Nations system. Special attention will be paid to relevant technologies for utilizing and producing environmentally sound renewable energy resources, such as solar, wind, geothermal, hydropower and biomass resources within the overall framework of economic and socially sustainable development. The role of women in each of the technologies will be elaborated in an integrated manner linking technical, socio-economic aspects within the overall sustainable environment.

OUTPUT 2: TESTING OF THE MULTI-MEDIA MODULAR TRAINING PACKAGE

An international high-level training seminar will be organized by INSTRAW in China in order to present and test the training package. The seminar will be attended by representatives of energy-environment boards/councils in charge of programmes, development planners, engineers; relevant women's organizations and non-governmental organizations in selected countries.

OUTPUT 3: REVISION AND FINALIZATION OF THE MULTI-MEDIA MODULAR TRAINING PACKAGE

Upon completion of the training seminar, the training package will be revised and finalized on the basis of comments and suggestion received from the participants.

PHASE TWO

OUTPUT 4: ORGANIZATION OF NATIONAL TRAINING SEMINARS

The seminar will be organized in four developing countries to present the training package and prepare a core group of trainers who will then apply the methods.

OUPUT 5: WORLDWIDE DISSEMINATION OF THE MULTI-MEDIA MODULAR TRAINING PACKAGE

The multi-media training package will be disseminated worldwide for use in various seminars in the areas of women, energy management, protection of the atmosphere and other related environmental and developmental issues.

OUTPUT 6: TRANSLATION OF THE MULTI-MEDIA TRAINING PACKAGE INTO CHINESE

As follow-up to the international training seminar, the training package will be translated into Chinese for national application. The training package will also be presented during the Fourth World Conference on Women: Equality, Development and Peace to be held in Beijing, the People's Republic of China, from 4 to 15 September, 1995.

5. ESTIMATED COSTS

		US$ Dollars
1.	**Project Personnel**	
	Project Coordinator (P-4) 36w/m	360,000
2.	**Training Activities**	
	International training seminar (5 days)	251,800
	Travel and DSA (30 participants)	187,000
	Travel and DSA INSTRAW Staff (3)	19,500
	Local costs(transportation, conference materials, communications, administrative matters);	10,000
	- International Consultants (3) Fees, Travel and DSA	34,500
	National Training Seminars (4) (One in each region, 5 days)	208,000
	Travel and DSA (30 participants) x 4	60,000
	Travel and DSA INSTRAW Staff (3) x 4	78,000
	National Consultants (3) x 4	24,000
	Local costs x 4	24,000
	Demonstration solar box cookers	22,000
	Contractual services	
	Revision and up-dating training package	15,000
	Translation and reproduction in Chinese	70,000
	Translation	10,000
	Production & reproduction of 100 x	60,000
	Reproduction and shipment of training packages (35 each seminar)	84,000
	Editing and production of reports from five training seminars	50,000
	Miscellaneous (Communication costs: telex, fax, long distance calls, hospitiality, supplies, etc)	30,000
	Total	1,068,800
	Programme Support Costs (13%)	138,950
	GRAND TOTAL	1,207,750

PROJECT PROFILE

Project Title:	**Development of Firewood Stove in Rural Areas**
Country:	People's Republic of China
Sector:	Energy
Duration:	To be determined
Proposed by:	Pan Yi, Zhejiang Research Institute for Biogas and Solar Energy[1]
Estimated Cost:	To be determined

1. Background and Justification

Woman in rural areas generally use the traditional firewood stove to transfer energy. They utilize firewood, straw and cogongrass as fuel; however, the energy efficiency is as low as 10-15%. They depend on felling large amounts of forest trees and vegetation for their livelihood, thus, destroying the ecological environment seriously. Besides, the smoke and fire impaired the health of women.

Since 5 years, energy-saving stoves employing biogas and solar energy are in widespread use in Zhejinag province. Until 1991, stoves in 6,290,000 families were transformed and more than 6 million tons of firewood were saved per year. Biogas stoves were constructed and the biogas energy resources were utilized in 210,000 families. Besides, solar water-heaters were installed in 30,000 families. The energy innovation in the rural families shows a great potential. The participation women in scientific technology is the main force of energy revolution in the rural families.

2. Objectives

i) To organize the research institutions and scientists to carry out research and development on the production of energy-saving firewood-stove, biogas digesters and solar water-heater;

---

[1] Contact: Pan Yi, Zhejiang Research Institute for Biogas and Solar Energy, Rural Energy Office of Zhejiang Province, C/o Chen Kun, Society of Science and Technology for Social Development, 20 West Chgegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

ii) To train required personnel for technical instruction, consultation and service;

iii) To propagate and make effective utilization of funds;

iv) To establish and install experimental sites.

3. Activities

Women are the direct beneficiaries of household energy resources in rural areas. Women-engineers and scientists participated in designing energy-saving firewood stoves and biogas digesters. Most of the trained personnel engaged in technical instruction and repair consultation are women. The role of the Women's Federation in advocating these energy saving devices are brought into full play. Now, more than 90% of the energy-saving firewood stoves and the biogas digesters are utilized by women. The main constraints anticipated are due to the restrict educational level in families, especially amongst women, and due to the lack of funds.

4. Expected Results

More than 1,000 kg firewood can be saved per year from one energy-saved firewood stove which corresponds to sealing 0.13 ha. of mountain pass. The energy efficiency can be increased by 10-15% and the efficient utilization of biogas, instead of firewood, decreases the pollution of carbon dioxide to the atmosphere. Besides, the efficient utilization of excrements and organic waste water by means of anaelobic treatment could transform them to energy, eliminate the pathogens and improve the living environment in rural areas absolutely. The project is expected to lighten the burden on women as well as improve the environment and the overall hygienic levels in the community, contributing to improved health. Besides, the widespread use of the new energy technology heightens their opportunity and ability to participate in social development.

The project will reinforce the significance of women's role in energy development in rural families. Energy-saving firewood stove, biogas and the solar energy can be widely used in vast areas. Besides, many new energy resources (such as wind energy resource, geothermal energy resource and the small hydropower station in the mountain area, etc.,) are needed to be developed in line with local conditions. Energy-saving firewood stoves improves the energy efficiency; however, it still only 20-30% effective and can be utilized more efficiently. International seminars in energy technology for rural families need to be organized, so as to exchange information on recent developments in household energy resource technology. An International New Energy Resource Technology Training and Widespreading Center, needs to be established to train core-members, especially women.

PROJECT PROFILE

Project Title:	**Promotion of Solar Cooking Technology for the Protection of the Atmosphere**
Country:	Global - two selected countries in each geographical region (Asia/Pacific, Africa, Latin America/Caribbean)
Sector:	Energy
Duration:	Training seminars over a two-year period
Proposed by:	Ms. Roma Stibravy[1]
Estimated cost:	US$ 255,380

1. Background and Justification

The Environmental Action Plan of Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED), sets out measures for achieving sustainable development with a focus on the use of new and renewable sources of energy, among others, as a factor in protecting the earth's atmosphere. Capturing the energy of the sun for cooking - the most universal daily human activitity, particularly in the lives of women in developing countries, meets all environmentally friendly criteria. Of equal significance is the alleviation of the burden on women in terms of foraging for wood, an activity which contributes to land degradation through deforestation.

The consequences of natural disasters, emergencies and the needs of refugees can also be addressed through the use of solar energy, particularly where no other energy source exists. Not to be overlooked are the adverse impacts of environmental degradation on human health, where more traditional cooking methods, such as wood or charcoal, are used.

It has been found that solar cooking technology competes economically with conventional energy sources. This approach can be adopted year-round in tropical and semi-tropical areas, and ten months a year in temperate zones.

---

[1] Contact: Ms. Roma Stibravy, 491 Belden Hill Road, Wilton, CT. 06897, USA. Tel: (212) 354-4482, (212) 762-5148; Fax: (212) 575-0327.

2. Objectives

The overall development objective of the project is to ensure a cost-efficient, easily accessible energy source, which is also environmentally appropriate and non-detrimental to human health. The immediate objectives of the project are:

- i) to establish a community-based participatory framework for women as responsible for health, nutrition and food preparation, which could serve to overcome socio-cultural constraints and promote the participation of women in the selection of ecologically viable technologies for household energy;
- ii) to prepare training workshops, entailing the production of videos and other training materials, for community groups and schools, while also training trainers, so that the technology is disseminated and women's self-reliance enhanced;
- iii) to assist in the establishment of small-scale industry for production, distribution and servicing of solar cookers, including the choice of materials and financing.

3. Activities

The approach will establish contact with rural community groups in two countries for each region (Asia/Pacific, Africa and Latin America/Caribbean), through education and communication, to prepare the ground for training activities and to establish a conducive working atmosphere.

Six workshops (two in each region of four days' duration each), will be organized with a maximum of thirty participants in each session. Local, regional and national leaders will be invited. The results of these workshops will be disseminated through participation of the media.

4. Expected Results

The participants will be trained in the use of solar cooking technology and in the production of solar cookers. Trainers would be trained for promotion and expansion of the technology and for follow-up activities.

5. **Estimated Cost**

Personnel	US$
International coordinator	$ 20,000
Consultant for follow-up/establishment of local industry bases for production of solar cookers, with local business participation (six months for feasibility studies in each country)	60,000
National/regional consultants in each country for interaction with local communities	48,000
Organization of six national training workshops and dissemination of results	90,000
Miscellaneous	
Reporting costs	5,000
Sundry	3,000
Programme support costs	29,380
Total	255,380

PROJECT PROFILE

Project Title:	**Introduction of Improved Stoves for Women**
Country:	Madagascar
Sector:	Energy
Duration:	To be determined
Proposed by:	United Nations Industrial Development Organization (UNIDO)[1]
Estimated Costs:	To be determined

1. Background and Justification

The fuelwood crisis in some countries is so critical that the fuel to cook food costs more than the food itself. With families having to forge for wood from longer distances and longer durations, the damage to the environment is enormous. However, improved stoves could alleviate this problem.

Women are generally affected by the fuelwood crisis in developing countries. They need a lot of fuel to feed old stoves or open fireplaces for cooking purposes. This is because traditional stoves, in many cases, are cheap and women lack the information and means necessary to settle for more modern and fuel efficient stoves. Consequently, natural resources are unnecessary exploited and enormous amount of time and labor lost in fuel collection. Therefore, UNIDO, is proposing to develop a project on the introduction of improved stoves for women in a selected country.

At this stage of the project proposal, it is unclear if the focus of the project will be on fuelwood, biomass, solar energy or charcoal. Experience has shown that it is extremely difficult to achieve widespread acceptance of improved woodstove that cost money in rural areas where fuelwood is collected for free. Requiring households build their own fuelwood stoves has been found to be slow and expensive, and generally results in poor quality, inefficient stoves.

However, charcoal use also has more adverse environmental effects than fuelwood, biomass or solar energy use because of the large energy loss in conversion of wood to charcoal and the fact that whole, live trees are often cut for charcoal production whereas fuelwood is usually obtained by cutting branches or collecting fallen pieces.

---

[1] Contact: Ms. Babette Klais, Women's Unit, UNIDO, P.O. Box 300, Vienna International Centre, A-1400, Austria. Tel: (43-1) 211-31-3719; Fax: (43-1) 232-156.

The availability of raw materials for producing improved stoves needs to be integrated. Therefore, a field study needs to be carried out before introducing new and improved cooking stoves to a given country.

As with any new appropriate technology, the adaptation of improved stoves does not automatically take place. Stove projects are not easy to implement and there have been many failures in this area. The period of time to achieve significant results should be carefully evaluated/analyzed. There has been a lot of work worldwide in design and testing of stoves and it would be wasteful to duplicate this work unnecessarily. Several proven designs that have been successfully disseminated in other countries should be field tested to determine market acceptability and trial production should be arranged to assess the feasibility and local cost of manufacturing.

To ensure the acceptance of improved stoves by the target group, a participatory approach needs to be applied. It is important to secure a constant exchange of ideas and experiences with the target beneficiaries, i.e. the potential users of the improved stoves. Only if the target group participates in the decision-making for introducing and carrying out an improved stoves project, can problems of acceptance be reduced. One precondition for the acceptance of improved stoves by the users is that they recognize the monetary advantage in buying such a stove.

2. Objectives

The long-term objective of the project is to design, produce and disseminate improved cooking stoves while meeting the needs of the targeted population and contributing to ecologically sustainable development. The immediate objectives are:

i) to undertake research studies to assess the needs of women for improved energy efficient cooking stoves; the research study will investigate and analyze the socio-cultural role of women in a selected country, specially the gender division of labor in the domestic sphere;

ii) to assess the fuel needs of the target group; and assess whether an average village family depends on wood or can afford a stove and their willingness to accept improved cooking stoves;

iii) to assess whether fuelwood is collected free of charge, if not the cost involved; and analyze the effect of fuel collection on the environment;

iv) to assess any stove programmes or projects already existing in other countries and reflect on the lessons learned; review the type of stoves being used in the selected country; and assess the availability of raw materials for producing stoves locally and decide on the type of stove to be produced; to indicate costs of materials;

v) to define a suitable dissemination strategy for the target group and identify and assess non-governmental or governmental programmes that could be suitable as national counterparts for introduction and dissemination of improved stoves;

vi) to evaluate the infrastructure; and estimate the infrastructure; estimate the production costs of the stoves adapted to the local situation and compare it to the costs of currently used stoves.

vii) to assess the impact of the introduction of improved stoves on the target group and their community;

3. Activities

A report containing an analysis of the social, socio-cultural and socio-economic aspects related to the promotion of improved stoves will be prepared, including a strategy for the dissemination of the selected technologies. Documentation will be included on the technological options representing realistic solutions to the problems perceived and to influence the success of the introduction of stoves (deforestation, social acceptance, raw material availability, manufacturing technology and cost) including a recommended plan for the final technology development and selection. A project document will be finalized based on the above mentioned reports covering the description of the potential cooking stove, its suitability to the local conditions and acceptability by the target group, i.e. potential users of improved stoves. The project document will also cover a description of the target group and of the counterpart including a dissemination strategy.

4. Expected Results

A planning workshop will be organized for designing the project in which all parties will be involved, i.e. women using stoves, stove producers, local non-governmental organizations, the government and UNIDO staff.

A detailed project document will be prepared covering the production of stoves, dissemination strategies as well as necessary support measures(credit, training, etc). The implementation phase will follow the approval of the project document.

PROJECT PROFILE

Project Title:	**International Conference of Women Municipal Leaders on Improvement of the Urban Environment and Protection of the Atmosphere**
Country:	People's Republic of China
Sector:	Energy
Duration:	One week
Proposed by:	Wang Yinping, Standing Deputy Secretary-General, Women Mayors Society, China Association of Mayors, Ministry of Construction[1]
Estimated cost:	US$ 248,600

1. Background and Justification

The adverse effects of rapid urbanization, particularly in developing countries, that has surpassed society's capacity to meet basic human needs is highlighted by Agenda 21. The high level of pollution in urban areas has been exacerbated by a marked increase in industrial activities resulting in high levels of greenhouse gas emissions, energy production and use, and transport systems - many of which were developed with little regard for the need for environmental protection. Urban development inevitably has long-term environmental impacts and consequent health implications. The challenge confronting municipal authorities in developing countries is that of trying to achieve a safe and healthy environment in urban settlements, while minimizing adverse impacts on economic development and growth, through the establishment of national infrastructures and programmes for providing adequate pollution surveillance, information gathering on environmental effects on human health, and environmental impact assessments to assist in determining adequate measures for preventing or alleviating pollution and for protecting the atmosphere. Therefore, human and institutional capacities will have to be developed through training, exchanges of information and experience on a wide range of social and economic issues, and awareness raising on the part of urban communities and their leaders.

---

[1] Contact: Wang Yinping, Standing Deputy Secretary-General, Women Mayors Society, China Association of Mayors, Ministry of Construction, San Li He Road, Beijing, People's Republic of China. Tel: (86-1) 8394200, or 8393047; Fax: (86-1) 8311563.

Furthermore, Agenda 21 called for the full and equal participation of women in all development activities and on the need to increase the proportion of women decision makers, planners and managers in the process of achieving environmentally sound and sustainable development.

The issue of involving women more directly in measures to improve the urban environment was discussed in the context of an international workshop on strengthening the role of women in environmentally sound and sustainable development, organized by the United Nations Department of Economic and Social Development (UNDESD) and the United Nations International Research and Training Institute for the Advancement of Women (INSTRAW) in Beijing, China.

There are only about 250 women mayors or vice mayors in all the 479 cities with municipality status in China, or 6 per cent of the total number of Chinese mayors and vice mayors - indicating that qualified women are in high competition for these positions. The establishment of a "Women Mayors' Society" in China has provided a means by which existing women mayors and vice majors can voice their concerns with regard to the urban environment, and ensure that environmental protection, economic development and urban expansion are mutually supportive endeavours. The obstacles with which they are confronted relate to: the constraints posed by traditional ideas and approaches; lack of funds with which to effect environmental improvements; and the burdens placed on women from having to compete for positions in the municipal context which will enable them to influence strategies and approaches towards environmental improvements, based upon their own experience and concerns.

2. Objectives

The long-term objective of the project is to contribute to the long-term protection of the atmosphere through the improvement of programmes for enhancing the urban environment. The immediate objectives are to focus on energy efficiency and energy demand management, and on the need to address the particular problems faced by women in urban communities.

3. Activities

The project is to convene a one-week international conference in a selected city in China, of women mayors and vice mayors from developed and developing countries, as part of the preparatory phase leading to the 1995 World Women's Conference being organized in Beijing, to discuss issues confronting women municipal leaders and their women constituents relating to urban environmental alleviation. Priority will be given to protection of the atmosphere through energy efficiency, conservation and pricing. Demand management in the field of energy and the role of women as consumers will also be given particular attention.

4. Expected Results

The exchanges of experience and technical and socio-economic knowledge are expected to result in the elaboration of prototype "Action Plans" comprising recommendations and measures to strengthen the role and participation of women in efforts to improve the environment in urban settlements, drawing upon the particular environmental perceptions of women citizens so that their needs are fully met.

5. Estimated Cost

Personnel	US$
International consultant for the preparation of background papers	15,000
UN staff preparatory mission (2 staff members)	10,000
Training	
Participation of 200 Chinese participants (DSA)*	10,000
Participation of 50 developing country participants	
Travel (50 x $3,500)	175,000
DSA	5,000
Miscellaneous	
Reporting costs	3,000
Sundry	2,000
Programme support costs	28,600
Total	248,600

* out of a total of 250 women Mayors and Vice-Mayors in China, at present; hence, an eventual increase in the number of participants may be advisable.

III. RURAL DEVELOPMENT/AGRICULTURE

PROJECT PROFILE

Project Title:	**Promoting Women in Agriculture: An Exchange of Experiences Between East European Women and American Women**
Country:	Bulgaria and Hungary
Sector:	Rural Development/Agriculture
Duration:	To be determined
Proposed by:	INSTRAW[1]
Estimated Cost:	US$ 263,516

1. Background and Justification

Agriculture plays a vital role in the economies of Bulgaria and Hungary[2]. Recent trends show agricultural production in these countries has been found to be declining less rapidly than industrial production. Therefore, during the current transitional period, the agricultural sector is expected to acquire greater importance in the overall level of economic activities. However, the transformation of Bulgarian and Hungarian agricultural sectors into internationally competitive systems will require, first and foremost, a diversified workforce skilled in modern and environmentally sound agricultural technology and marketing practices. This training proposal is designed to provide the kind of training and skills that will help prepare an important part of that workforce: women.

The focus on women is of particular importance since they generally have fewer managerial, technical and other professional skills than men. As the countries in Eastern Europe shift towards market economies, women's economic status can be expected to fall. This will likely occur for several reasons:

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 685-2111; Fax: (809) 685-2117.

[2] The contribution of agriculture to the Gross National Product of these countries is 22% and 16% respectively, (See Economic Research Service, Centrally Planned Economies Division, U.S. Department of Agriculture).

i) Women are concentrated in the less productive, labour-intensive, low wage sectors where investment in new technologies has been limited. These sectors will face stiff competition and, as a result, many women are expected to lose their jobs.

ii) Support services for women workers, such as day-care centres, are already being closed in some areas because they are considered to be inefficient and too costly by market-oriented employers.

iii) As social services, in general, and in the state sector are cut back, women who are dis-proportionately employed in these areas will also experience a similar share of unemployment.

iv) Women generally have had less access to capital and credit, and traditionally held fewer positions of political or economic leadership. They lack experience with risk-taking and decision making that is essential for entrepreneurial activities which will be encouraged in the new economies.

2. Objectives

The general objective of this exchange programme is test the effectiveness of cross-cultural exchanges as a means of transfer of information in a changing environment.

The more specific objectives are to introduce the Bulgarian and Hungarian women to farm operations in a market economy. Based on preliminary assessments, important training activities will likely include: 1) financial management and book keeping; 2) strategic management of farm operations, including supervision of a hired labour force; 3) access to technology and production choices; 4) exposure to marketing techniques; and 5) decision making and risk taking. The training programme would seek to expose the Eastern European women to managerial, technical and other skills relevant to agricultural work in a market economy, within the framework of sustainable development. Of particular importance is the goal of broadening their general knowledge base and enhancing their future decision-making abilities. As new technologies and market economies are being established throughout Eastern Europe, women need the knowledge, experience and confidence to make appropriate decisions.

3. Institutional Framework

INSTRAW is an autonomous organization within the UN system that focuses on training and research for women and development. INSTRAW has a strong mandate in the field of training and it has extensive experience in the design and implementation of innovative training projects for women worldwide. This project reflects the Institute's catalytic role as it is envisioned that this pilot training programme will result in a training model from which future exchange programmes for rural women will be developed between other Eastern and Western European countries.

Collaborating with INSTRAW in this project are the United Nations Associations in Iowa and Minnesota along with Morning Glory Farms, an association of milk producers in Wisconsin, USA. Initial contacts have also been made with the Bulgarian institutions and the Hungarian Embassy in Washington, D.C. INSTRAW is also collaborating with the United Nations Economic Commission for Europe (ECE) on this and similar projects. Favourable contacts have also been made with various other organizations, such as: the United States Department of Agriculture, the North-Central Regional Center for Rural Development of Iowa State University, University of Wisconsin - Cooperative Extension, and the Office of Representative Timothy Penny, that have all expressed interest in supporting this project.

4. Activities

The exchange programme will be designed to provide a unique hands-on training opportunity to rural women from Bulgaria and Hungary to participate in farm operations in a market economy, such as that of the USA. Numerous organizations in the United States expressed interest in such a project and contributed to the design and development of this pilot project. The exchange programme will also provide a new learning and cultural experience to American farm women who will visit and receive the reciprocal hospitality of Bulgarian and Hungarian farm women in their respective countries. The project is designed in two phases: research and training.

Phase One: Preliminary Research

Comprehensive surveys of the current status of women in agriculture in Bulgaria and Hungary will be undertaken in order to build a framework within which the exchange programme itself would be constructed. The research will gather economic, technological and socio-cultural data, both at the macro and micro levels, along the following lines:

i) macro-economic - How do women relate to agricultural life within their respective macro-economic systems?

ii) micro-economic - How do the farmers deal with the various financial aspects of farming, such as cost and marketing mechanisms, profit margins, access to credit, control over resources, administration and management among others?

iii) technological - How do women relate to technology in terms of information, type, uses, access, control and decision-making?

iv) socio-cultural (macro) - What is the status of agricultural women in the country, how are their contributions and productivity valorized, what is the degree of their access to property, technology, credit, information and education/training?

v) socio-cultural (micro) - What are the daily duties and activities of women, what is the gender division of labour; how do women manage their multiple productive and reproductive responsibilities?

The assistance of research institutions from these two countries is to be sought, such as leading universities and agricultural institutes with expertise in this field. They will be known as the national coordinating institutes in this project. The process of identifying these national institutes is presently underway.

These institutions will provide an assessment of training needs and identify potential participants for the training or exchange activities of the project. The participants will comprised of 15 women from each East European country, who either occupy a managerial position, possess technical knowledge and skills (such as, experience in operating mechanized equipment) or those have carried out agricultural research. By this particular target group, INSTRAW aims to maximize the multiplier effect inherent in the "training of trainers" who would return to their communities and provide the necessary assistance and training required for women farmers. In addition, thirty American women will be identified, through the assistance of appropriate agencies, to participate in the training-exchange portion of the project.

Phase Two: Training/Exchange Programme

The innovative training programme of this project will be designed according to the assessment of training needs and, as indicated earlier, is envisaged to comprise of an exchange of experiences between the East European participants and women farmers from Iowa, Minnesota and Wisconsin, United States of America. By actively participating in the farm operations of the American women, the first stage of the training/exchange programme will allow the Bulgarian and Hungarian participants to gain hands-on experience with many of the activities dealt with in the training sessions. At the end of the training/exchange programme, the Bulgarian and Hungarian participants will be asked to prepare Community Plans to indicate how the knowledge acquired can be concretely applied within their community contexts. Further assistance, from the American women, in the implementation of these plans can be provided to the East European women during the second stage of the training/exchange programme in which American women will travel to Bulgaria and Hungary.

At an initial contact with the National Association of Women in Agriculture, USA, women farmers expressed interest in participating in this exchange programme and showed willingness to accommodate women farmers from Eastern European countries in their respective farms, for the duration of the exchange. They were also interested in the exchange possibilities of visiting their counterparts in Bulgaria and Hungary, and participating in farm and cultural activities in those countries.

INSTRAW foresees that the Community Plans, elaborated by the East European participants, will provide the basis for follow-up and impact evaluation of the training programme, which will be conducted in a later stage of the project (Phase Three, 1994-1995 biennium).

5. Expected Results

- Two substantial research studies on the position of Hungarian and Bulgarian women undergoing the transition of their countries and an assessment of their training needs to prepare for future advancement.

- Training model employing the exchange methodology and including a set of training materials for further use between Eastern and Western European countries.

- Through the exchange programme, developing important Community Plans to be implemented with the assistance of the national coordinating institutes in Bulgaria and Hungary.

6. **Estimated Cost**

Phase One: Research and Training Needs Assessment (in progress)

I. Participation in ECE Workshop (Godollo, Hungary 22-26 June 1992) to sensitize national officials and to identify National Coordinating Institutes that can prepare training needs assessment, assist in the selection of project participants and be responsible for the implementation of project activities in Hungary

- travel and per diem for INSTRAW staff member
- funds for preparing training needs assessment by national coordinating institute

II. Mission to Bulgaria to identify National Coordinating Institutes to prepare training needs assessment, assist in the selection of project participants and be responsible for the implementation of project activities in Bulgaria

- travel and per diem for INSTRAW staff member
- funds for preparation of training needs assessment by national coordinating institute

Phase Two: Training/Exchange Programme

I. Project Coordinator to design programme, oversee development of training materials, organize and coordinate exchanges with NCIs and prepare final report including evaluation of training

- production of training materials
- travel and per diem of Project Coordinator to Bulgaria and Hungary in US dollars 4,500 5,000 3,500 5,000 25,000 10,000 10,000

II. Stage One - East European Participants to USA

- travel for East European women (30)
- minimal expense funds for East European women

III. Stage Two - USA Participants to Eastern Europe

- funds for NCIs in Bulgaria and Hungary to implement activities, including translation of training materials into national languages
- travel for American women (30)

IV Preparation of Final Report, including evaluation of Training/Exchange Programme
Miscellaneous
SUBTOTAL
Project Administration Support Services (13%)
GRAND TOTAL

1994-1995 Biennium

Phase Three: Impact Analysis

1. Assistance funds for NCIs in Bulgaria and Hungary to monitor the impact of the training programme over a determined period of time and prepare for the impact analysis/final report identifying follow-up activities

Funding Collaborators:
Iowa State University
University of Wisconsin - Extension Office
60,000 10,000 30,000 60,000 5,000 5,000 233,200 30,316
263,516

PROJECT PROFILE

Project Title: **Arresting Deforestation by Introducing Women Farmers to Animal Traction**

Country: Zaire

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Ms. Daniela Colombo, Director AIDOS[1]

Estimated Cost: To be determined

1. Background and Justification

Luozi, one of the country's most densely populated areas, is predominantly hilly and has undergone a progressive transformation from equatorial forest to savannah, which began with the spread of plantations in the colonial era and has continued to the present. The fertility of the hills is still good and the land is suitable for the cultivation undertaken by women: ignami, peanuts, pumpkins and in the more planted soil, beans, corn and rice. Water is abundant in terms of both precipitation and rivers but the tools used are limited to hoes and machetes which do not allow sufficient soil aeration and, therefore, contribute to a rapid loss in fertility. Thus, deforestation continues on ever expanding hill plots.

The initiative originated when a group of women, who had organized themselves to share work and pool resources, contacted an integrated rural development project financed by the Italian Development Cooperation in the neighbouring Luala. Within the framework of this project, several women received training related to the domestication of local breeds of oxen and in using them in pairs for plow traction. The training course was held by Luciana Tura, a social agronomist and member of AIDOS, who has lived in Zaire for many years dedicating herself to agriculture and carrying out dissemination and support activities on her own with organizations of women's groups. The Italian intervention with the group was concluded, however, without the provision of any oxen. Therefore, the training was left without the possibility of practical application.

---

[1] Contact: Ms. Daniela Colombo, President, Italian Association for Women in Development (AIDOS), Via de Guibbonari 30, 00186 Rome, Italy. Tel: (30-6) 68-73-214; Fax: (39-6) 68-72-549.

The initiative requires furnishing of three pairs of plow oxen and related equipment (such as yokes, plows, harrows, cart, etc.) as well as a small stock of improved seeds for developing and diversifying agricultural production; deepening of the training in the area of animal traction and its expansion to include aspects of agronomy, veterinary science, soil defense and harvest storage.

The introduction of animal traction would facilitate the better use of the land and, therefore, lead to the abandonment or at least significant reduction in the practice of shifting cultivation whose damaging environmental effects are well known. The use of this technology is not completely unknown to the beneficiaries/subjects of the initiative, who have already shown their interest in it. Furthermore, it involves a very simple technology with locally available components (oxen and equipment) and very modest management costs (maintenance of the oxen and equipment).

The beneficiaries comprise of the cooperative group of farmers in Luozi, (Basse-Zaire region, Luozi, Songololo zone) united in FADR (60/70 women), and their families.

2. Objectives

i) To improve and diversify the diet of the local population, without increasing women's work load;
ii) to further develop the cooperative spirit that is already existent at an initial level;
iii) to lighten the daily work load, thus, freeing time for other activities;
iv) to increase and diversify agricultural production for local food use;
v) to diffuse an awareness of the relationship between the population and its surrounding environment in the local community.

3. Institutional Capacity

The project will be built around the existing infrastructure. The members of the cooperative will be responsible for providing land and equipment for the maintenance of the oxen as well as a shed for the equipment.

4. Activities

The project does not involve training women in new activities. It focusses on teaching them to apply more efficient and appropriate technology to the work they are already carrying out.

The project expects to purchase the following equipment: three pairs of domestic oxen; three double yokes; two single yokes; three plows; three harrows; three hoes; one cart; and seeds.

5. Expected Results

The cooperative group of farmers in Luozi and their families would benefit. The beneficiaries would have the possibility of practical application after their training.

The expected social impact is that the work of peasant women will be given more value within the community without traumatic economic or social changes.

The introduction of animal traction would have contributed to the better use of the land. The practice of shifting cultivation whose damaging environmental effects are well known would have been abandoned or at least reduced significantly.

PROJECT PROFILE

Project Title: **A Guide to Growing and Marketing of Medicinal Plants and Products**

Country: Latin & Central America (Dominican Republic, Ecuador and possibly Venezuela) & Asia

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Bettina Corke[1]

Estimated Cost: To be determined

1. Background and Justification

The interest in biodiversity of the environment and sustainable development needs to be coordinated and consolidated. In this context, small to medium size commercial medicinal plant producers need to be supported in the task of developing medicinal herbal gardens. In further support, the possibility of combining commercial medicinal plant crops with traditional market gardening is to be explored.

2. Objectives

The overall objective is to co-ordinate and consolidate the interest in biodiversity of the environment and in sustainable development on the part of international and national sustainable development networks worldwide. These coalitions would include UN agencies, economic botany, human resources, women-in-development and environmental networks. The immediate objectives are the following:

- to research and to develop documentation (data-base) on the medicinal plants presently being used in these three countries;
- to collect and take an inventory of these identified medicinal plants;

---

[1] Contact: Bettina Corke, President of CD Resources, Inc., Board Member and Chairperson of the Task Force on Communications for the US Council for INSTRAW, 47-49 E. 65th Street, New York, NY 10021, USA. Tel: (212) 580-2263; Fax: (212) 580-2263.

- to produce a plant list for the three countries;
- to analyse the chemical medical effectiveness of the selected plants;
- to research the highly developed medicinal plant know-how and data observation information available, particularly so in China and see how this exchange of information might be applied to this project;
- to create if necessary national demonstration medicinal plant gardens;
- to publish a "how to" publication on the growing and marketing of medicinal plants in a sustainable agricultural manner;
- to consider the possibility of incorporating the growing of medicinal plants as a secondary crop for market gardeners;
- to investigate the possibility of incorporating medicinal plant demonstration sites into ecotourism.

3. Activities

First stage: to collect national medicinal plant data using graduate students to research folklore, visit local markets and to obtain specimens of the medicinal plants being used. This will give us a national/plant list.

Second stage: to collect all the plants on the national plant list, make an inventory, chemically analyse them and identify soil, climatic, growing and preservation requirements for each plant.

Third stage: to set up, if required, national demonstration sites to disseminate and to monitor botany development and to act as a clearing house to collect materials to be included in the "how to" publication dealing with cultivation.

Fourth stage: to recruit private sector and commercial interests to financially support the project to make it self-sustaining.

4. Expected Results

A "How To" publication to support small to medium size commercial medicinal plant producers would have issued. Trainers of semi-skilled and skilled women agricultural workers would have been trained to use this publication. The possibility of combining commercial medicinal plant crops with traditional market gardening would have been explored.

Primary Resources/Services

* Bettina Corke, Print and CD Publisher & Cross-Communications and Media Specialist.

* Professor Dr. Tetsuo M.Koyama, College of Agriculture, Nihon University, Fujisawa, Japan; Chair of the US/Japan Committee for Promotion of Asian Economic Botany and Professor (non-Res) Ph. D. Program in Biology, Graduate School, The City University of New York, USA.

* Professor Dr. Irene Tinker, President of the US Council for INSTRAW and Professor of City & Regional Planning, University of California at Berkeley, California.

* Ms. Alicia Paolozzi, Chair, International Task Force of the Senior Environmental Corp.

** Santo Domingo Botanical Gardens.
** New York Bptamoza; Gardens.
** Missouri Botanical Gardens.

PROJECT PROFILE

Project Title:	**Market Gardening Production and Market Gardening Opportunities in an Ecologically Sound Environment**
Country:	Regional - Africa, Europe and English Speaking Caribbean
Sector:	Rural Development/Agriculture
Duration:	3 years
Proposed by:	Bettina Corke[1]
Estimated Cost:	To be determined

1. Background and Justification

The issue of hunger in migrant women and female subsistence farmers and their families, in urban and peri-urban areas, and the lack of opportunities for them to use their skills have been serious concerns that need to be addressed.

They need support and assistance in the areas of problem identification and problem solving, so opportunities may become available.

2. Objectives

The development objectives are to address the urgent question of urban hunger for women and their families. The project offers an opportunity for women internal migrants to use their skilled and semi-skilled agricultural skills in a sustainable agricultural and developmental manner.

The immediate objectives are (i) to identify key volunteers and personnel (such as, the International Union of Local Authorities and Municipalities, USDA Extension Services Hunger and Nutrition Program: Senior Environmental Corp, National technical Advisory Bureaux and others) to support and/or assist women in problem identification and problem solving issues to be considered in the setting up and commercialising market gardens.

---

[1] Contact: Bettina Corke, President of CD Resources, Inc., Board Member and Chairperson of the Taskforce on Communications for the US Council for INSTRAW, 47-49 E. 65th Street, New York, NY 10021, USA. Tel: (212) 580-2263; Fax: (212) 580-2263.

3. Activities

This proposal has three phases. In Phase One, a core group of practitioners and experts will be identified. In Phase Two, local capabilities will be identified and a market garden around the concept of sustainable development will be designed. In Phase Three, sustainable agricultural market gardens using field tested, cost-effective, national self-reliant technologies and inputs will be established.

Further, crop yields, seeds and urban marketing requirements are to be evaluated. The project will also look at ways in which the National Technical Assistance Bureau's capabilities can be strengthened along interdisciplinary and multi-sectoral lines.

4. Expected Results

The issue of urban hunger for women and their families will be addressed. Opportunity structures will be established for women migrants to use their skilled and semi-skilled agricultural skills in a sustainable agricultural and developmental manner.

Key volunteers will be identified. Women will receive support and assistance in problem identification and problem solving.

A core group of practitioners and experts will be identified. Local capabilities will be identified and a market garden would have been designed around the concept of sustainable development. Sustainable agricultural market gardens using field tested, cost-effective, national self-reliant technologies and inputs will be established.

Crop yields, seeds and urban marketing requirements will be evaluated. The project would looked at ways in which the National Technical Assistance Bureau's capabilities can be strengthened.

PROJECT PROFILE

Project Title:	**Unlocking Socio-economic Structures to Improve Rural Women's Productivity**
Country:	Group 1: East/Southeast Asia (China, Indonesia, Thailand, Vietnam); Group 2: South Asia (Bhutan, India, Pakistan, Nepal, Sri Lanka); Group 3: Pacific Area
Sector:	Rural Development/Agriculture
Duration:	18 months
Proposed by:	Food and Agriculture Organization[1]
Estimated Cost:	US$ 200,000 per town, district or county

1. Background and Justification

The focus in the past 15 years on advocating for women's needs has resulted in a proliferation of income-generating activities. These have undoubtedly enhanced household incomes as well as given women a new self-awareness and strengthened their autonomy and, in some countries, a new stage of development has been achieved. Women's groups have, however, remained marginal, and in many cases, their organizations have simplified middle-men's "harvest" of more lucrative returns from investments, as for example, in Indonesia, Philippines and Thailand.

The lessons learned in these countries have benefitted project designs in China. FAO adopted a more structural perspective at the country level. The project design exercise was influenced by the analysis of economic structures having upstream and downstream impact. For example, a loan scheme was granted to certain critical township enterprises which were experiencing marginal production outputs, and which, in effect, were creating a "clogged" market for household production. The choice of enterprise was woman-biased in that they catered to household produce where women were the main producers. At a second level, women are organized into savings and loans operations. The handling of cash and decision-making bring about an entire range of creative thought towards entrepreneurship which spreads into other aspects and value related areas of women's own activities.

---

[1] Contact: Ms. Dale Campbell, Programme Officer, FAO Representative Office, Beijing, People's Republic of China. Tel: (86-1) 532-2835; Fax: (86-1) 532-5092.

2. Objectives

i) To determine which socio-economic structures impinge upon rural women's quest for higher productivity;

ii) To determine the critical structural interventions needed and the critical players to effect the required changes;

iii) To develop communications and methodological tools for advocacy;

iv) To develop at least one action-oriented project per module (town, district or county).

3. Activities

The project activities will focus on organizing participatory research and advocacy workshops, and on collaborating with the private sector, research companies and NGOs.

	Activities	Responsible	Site	Duration/month
a.	Project Development/ Documentation	FAO	Countries	Months 1-3
b.	Local counterparts determined	FAO-Country	Countries	Months 1-3
c.	Hiring of international/ local consultants	FAO-Country	FAO(Rome)	Months 4-5
d.	Develop. of research methodology & tools/ operations planning	FAO-Country Inter-country	1 Country in-region PhI draft	Ph.I-Mth.6 PhII-Mth.7 PhIIworkshop
e.	Research	NGOs/Private	Countries	Month 8-11
f.	Workshop Inter-country	FAO-Countries	1 Country	Month 12 in region
g.	Development/ Reproduction of communications tools for advocacy	FAO		Mth.12-13
h.	Advocacy workshops/ project development	FAO	Town/district country (in each country)	Mth.14-17
i.	Terminal report	FAO		Month 18

4. Expected Results

Socio-economic structures will be institutionalised to improve rural women's productivity.

5. Estimated Cost

The nature of inputs would include funding for local and international consultants: research, workshops, communications tools - printing/electronic development, reproduction and administration.

PROJECT PROFILE

Project Title: **Ecologically Sound Market Gardening Enterprises**

Country: Regional - Africa, Europe, English-Speaking Caribbean

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Bettina Corke[1]

Estimated Cost: To be determined

1. Background and Justification

This proposal addresses the compelling question of urban hunger for women and their families. It offers an opportunity for women internal migrants to use their skilled and semi-skilled agricultural skills in a sustainable and developmental manner.

2. Objectives

The overall objectives are to increase market gardening production and market gardening opportunities in an ecologically sound environment. The more immediate objectives are key volunteers and personnel such as the International Union of Local Authorities and Municipalities, USDA Extension Services Hunger and Nutrition Programme; Senior Environmental Corp and others to support and/or National Technical Advisory Bureaux to assist women in problem identification and problem solving issues to be considered in the setting up and commercialisation of market gardens.

3. Activities

The proposal has three phases. In Phase One - to identify a core group of practitioners and experts; in Phase Two - to identify local capabilities and to begin designing a market garden around the concept of sustainable development; and in Phase Three - to establish sustainable agricultural market gardens using field-tested, cost-effective and national self-reliant technologies and inputs; to evaluate crop yields, seeds, urban marketing requirements; and look at ways in which to strengthen a National Technical Assistance Bureau's capabilities to be interdisciplinary and multi-sectoral.

---

[1] Contact: Bettina Corke, President of CD Resources, Inc., Board Member and Chairperson of the Taskforce on Communications for the US Council for INSTRAW, 47-49 E. 65th Street, New York, NY 10021, USA. Tel: (212) 580-2263; Fax: (212) 580-2263.

Activities would be launched to provide employment and enhance the income to women subsistence farmers and migrant women living in peri-urban and urban areas. In addition, this will be linked to ensuring a more nutritious daily family food intake is provided for families. The project will also demonstrate that opportunities exist for women to enter market gardening using new techniques and alternate agricultural applications. The possibility of combining commercial medicinal plant crops with traditional market garden produce will also be explored.

4. Expected Results

Market gardening production and opportunities will be enhanced in an ecologically sound environment. Employment opportunities will be increased and income will be generated among women subsistence farmers and migrant women living in peri-urban and urban areas. Families will also have more nutritious daily food intake.

On the whole, the project will show that opportunities exist for women to enter market gardening using new techniques and alternative agricultural applications.

PROJECT PROFILE

Project Title:	**Feeding the Cities**
Country:	Global
Sector:	Rural Development/Agriculture
Duration:	To be determined
Proposed by:	Professor Irene Tinker[1]
Estimated Cost:	To be determined

1. Objectives

i) To identify food production among the poor in major cities;

ii) To support and encourage poor women and their families to grow food and to raise animals for home consumption and sale in an environmentally sound, sustainable and healthy manner;

iii) To encourage alternative environmentally sound ways of using green spaces in the increasingly densely populated urban centres.

2. Activities

Activities will support and encourage growing food and raising animals for home consumption and sale in an environmentally sound, sustainable and healthy manner.

3. Expected Results

Avenues of food production in an environmentally sound and sustainable manner will be identified. Poor women and their families will be encouraged to grow food and to raise animals for domestic consumption and sale in an environmentally sound, sustainable and healthy manner.

---

[1] Contact: Ms. Irene Tinker, President of the US Council for INSTRAW, and Professor, Department of City and Regional Planning and Department of Women's Studies, University of California at Berkeley, Berkeley, USA. Tel: (202) 289-3812.

PROJECT PROFILE

Project Title:	**Women and Pesticides - Training and Education**
Country:	Global
Sector:	Rural Development/Agriculture
Duration:	To be determined
Proposed by:	United Nations Development Fund for Women (UNIFEM)[1]
Estimated Cost:	US$ 223,197

1. Background and Justification

An international monitoring of the pesticide situation in 13 countries in Africa, Asia and Latin America was launched in 1987. The monitoring exercise used the International Code of Conduct of the Distribution and Use of Pesticides adopted by the FAO as a minimum standard for pesticide practices in developing countries. IOCU, with the help of national PAN groups, helped put together the Asian monitoring which was compiled into an international PAN report by the Nairobi based Environment Liaison Centre International (ELCI), the PAN regional coordinating centre for Africa. The following results were identified:

* farmers and plantation workers applying pesticides without any protective clothing;
* dangerous pesticides, such as temik (aldicarb), being repackaged in small polythene bags without any label instructions and the repackaging being undertaken without any safety precautions;
* pesticide containers being reused for storing food and water;
* inadequate labelling and packaging;
* misleading advertising depicting pesticides as safe and advertisements showing pretty women spraying pesticides without any protective clothing;

---

[1] Contact: Ms. Beti Astolfi, UNIFEM, Room FF-616, 304 East 45th Street, New York, NY 10017, USA. Tel: (212) 906-6442; Fax: (212) 906-6705.

- a lack of knowledge about safe use and the dangers of highly hazardous pesticides being applied.

The results of this monitoring exercise initiated discussions on pesticide export controls both in FAO and UNEP and brought about the adoption of concept of Prior Informed Consent (PIC). PIC would enable export of hazardous pesticides only when importing countries have given their consent. Importing countries can also request for more information about these pesticides, if needed. Nationally, groups used their monitoring results to give publicity to the problems and to urge their governments to implement better pesticide controls.

During the monitoring in Asia, we also found that many of the pesticide applicators, especially in the plantations, were women. They are being exposed to pesticides during pre-planting and harvesting and were special targets for advertisements encouraging the use of household insecticides. These workers have to deal with the adverse effects of pesticide application but lack the power to organize towards better working conditions.

In order to raise the awareness of women and to provide them with the resources and training to ensure better pesticide practices and curb some of the misuse and overuse of pesticides, this project has been put forward by PAN Asia and the Pacific.

2. Objectives

The medium-term goals of the project are to enable women to become more aware of the hazardous nature of pesticides and the national policies related to pest management; and to enhance the capacity of women's groups, the government and other public interest groups of the need to reduce human and environmental damage caused by pesticides. The immediate objectives are:

i) to develop pesticide training, informational and educational activities for public interest groups working on women's issues;

ii) to increase women's direct involvement in NGO leadership roles regarding pesticides;

iii) to determine the real conditions of women's exposure to pesticides in a selected number of Asian countries;

iv) to strengthen network of pesticide monitors and advocates for sustainable pest control;

v) to create linkages with relevant government agencies wherever possible.

3. **Activities**

i) Training

A series of small training workshops will be organised, together with groups working on women's issues, including women's groups in Indonesia, the Philippines, Malaysia and Thailand in 1991-1992. Another series of workshops will be undertaken in India, Bangladesh, Pakistan and Sri Lanka between 1992-1993. The training workshops will focus on the International Code of Conduct, the Distribution and Use of Pesticides and on the use of the Code as an instrument to campaign for better pesticide practices. The workshops will also build organisational, advocacy, research and networking skills.

In 1985, the Code was adopted by the 148 member governments of the Food and Agriculture Organisation (FAO) of the United Nations and by the pesticide industry. Thus the Code can be used both as a yardstick to measure the pesticide practices of the pesticide industry and governments as well as an education and campaign tool to publicise the issues and to strengthen inter-national and national controls on pesticides. In addition, implementing the Code fully and globally would end many of the hazardous pesticide practices occurring in the developing countries.

IOCU will be involved in the translation of resource materials into the local languages. There are a number of manuals on pesticides that deal with how to use the Code to campaign for better pesticide practices as well as publication that explains the pesticide issue in an easy question and answer format. IOCU has also published a book on successful case studies of alternatives to pesticides in the developing countries.

A number of public interest groups want to work with IOCU to translate as well as adopt these IOCU resources to the local situation for wide dissemination.

IOCU will produce a Citizens Action Guide on Household Insecticides. A recent survey revealed dangerous pesticides that were available as active ingredients of household insecticides. They were often dangerously marketed and sold. Household insecticides are widely used in homes and promotion ploys often target women in homes. Furthermore, household pesticides are usually not adequately regulated. The Action Guide would provide suggestions on monitoring household insecticides and on using the monitoring results to bring about safer household pest control methods.

ii) Information

Case studies on impact of pesticides on women and children will be carried out in the Philippines, Indonesia, Thailand, Malaysia, India, Sri Lanka and Korea by local groups in the country. This will be compiled and produced by IOCU, and used for raising the issues and initiating discussions at the governmental level.

IOCU will continue to maintain a clearing house and Documentation Centre on Pesticides. Furthermore, as it builds linkages with citizens groups in this region and with their counterparts in industrialised countries, it will facilitate the exchange of information and experiences. The following recent activities help illustrate this role:

- Indian activists, working to influence the new pesticide policy in India, contacted IOCU for statistics, reports and studies on the effects of pesticides on humans and the environment, to strengthen their case.

- The Hong Kong Consumer Council telexed IOCU for information on methamidophos, a pesticide that was found in vegetables sold in Hong Kong. IOCU got in touch with WHO, FAO, IRPTC and the PAN North America Regional Centre for information on methamidophos residues in food and immediately faxed the information to Hong Kong.

- A bimonthly circular, Pesticide Monitor, is produced by OICU and distributed to more than 100 public interest groups interested in the pesticide issue in this region. The circular will provide the lesson on pesticide campaigns and be a digest of events, news on pesticides extracted from more that 100 periodicals. In addition, it will serve groups and help provide a conduit for them to share local news and information on their countries.

iii) Education

Non-chemical pest control methods include biological controls, crop rotation, proper tillage practices and pest resistant plant varieties. When integrated with other farming practices, they form self-reliant agricultural systems. IOCU is involved in promoting sustainable pest control methods. It has published Escape from the Pesticide Treadmill; Alternatives to Pesticides in Developing Countries. The book provides detailed case studies of successful IPM programmes in developing countries. IOCU will soon make available Breaking the Pesticide Habit: Alternatives to 12 Hazardous Pesticides which documents specific pest control alternatives to the Dirty Dozen pesticides.

IOCU will ensure that the training provided will also include training on how to promote sustainable pest control. It will support national campaigns for policies on IPM and publicise them within the network as well as to policy makers.

IOCU will expand the Pesticide Code Documentation Centre (PCDC) which collects, translates and classifies data on government and industry practices, including national legislation and voluntary guidelines adopted by pesticide manufacturers.

The PCDC already has the legislation of several countries as well as information on pesticides, their toxic effects, case studies and statistics of pesticide poisonings, and alternatives to their use. It regularly makes these resources available to citizens groups on request.

PCDC will expand this collection by gathering information on pesticides hazardous for women, statistics on women involved in pesticide application or in contact with pesticides. The PCDC will also collect all types of codes (voluntary and binding, regional and national, single company initiatives or industry-wide), laws, regulations and other legal instruments related to the use of pesticides. It will also act as a repository for data collected by PAN groups observing compliance with the Code and for other documentation of pesticide misuse or abuse.

The single issue focus and action-oriented approach of this specialized data bank makes it an exceptional information tool.

Requests for information on pesticides, their human and environmental health effects, regulations and medical treatment information are constantly received. IOCU is linked up with several data bases. It is exploring different data bases and electronic exchanges that will immediately connect with current information on pesticides.

4. **Expected Results**

The project is expected to increase women's participation in decisions on agricultural lands for pesticide use that would affect their health and well being.

A more cohesive network of women's groups will be established who will take up the health issues of pesticides use by women and advocate the curbing of hazardous pesticides.

More public awareness of the pesticides issue will result which will lead to moving away from the massive use of pesticides towards sustainable pest control.

5. **Estimated Cost**

		In U. S. Dollars			
Line	Category	Year 1	Year 2	Year 3	Total
10	Project Personnel	14,400	14,400	14,400	43,200
11	Professional	433	10,433	8,433	27,299
15	Duty Travel	600	4,600	4,600	13,800
16	Mission Travel	000	3,000	4,000	10,000
30	Training*	35,700	35,700	35,700	107,100
40	Equipment; Material Production of guide and case studies, computers	6,266	6,266	6,266	18,798
50	Miscellaneous	1,000	1,000	1,000	3,000
	Total	71,399	73,399	71,399	223,197

* Including seed grants to local groups for action research

PROJECT PROFILE

Project Title: **Pilot Village Involving Women's Participation in the Development of Ecologically Sound Agriculture**

Country: China

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Dong Shu Qin, Director, Women's Federation, Yushu City[1]

Estimated Cost: RMB 3 Million

1. Background and Justification

The Kaohe Village in Baoshou Township, Yushu City of Jilin Province, has 1,000 hectares of land, out of which 670 hectares are hillside fields and fields vulnerable to water-logging. However, because of the inadequate development and utilization of natural resources, the fields have long remained low-yielding in spite of a high input. This has contributed to an unbalanced ecosystem. In order to alleviate the problem, the Women's Federation has mobilized women farmers to transform and develop the waterlogged lowlands and use them to raise fish, grow rice and breed chickens. This project has met with initial success.

2. Objectives

To scientifically combine the systems of biology, environment, and artificial control and monitoring in line with the natural law and local geographical location in a bid to establish a scientific and efficient production system and ensure coordinated development of economic efficiency and environmental protection.

3. Activities

The project will transform 670 hectares of waterlogged lowlands for rice growing; put five million fish fries to paddy fields; raise 200,000 chickens and use chicken droppings to feed fish in order to bring about a favorable ecological cycle.

---

[1] Contact: Dong Shu Qin, Director, Women's Federation, Yushu City, Jilin Province, China-130400, Tel: (86-1) 04415-3584.

Activities will focus on promoting advanced technology among women farmers and using successful rural households to play an exemplary role in the community.

4. Expected Results

A scientific and efficient production system ensuring coordinated development of economic efficiency and environmental protection would have been established.

In order to bring about a favourable ecological cycle, the following would have been accomplished: about 670 hectares of waterlogged lowlands would have been transformed for rice growing; five million fish fries would have been deposited in paddy fields; a chicken farm for about 200,000 birds would have been established and the chicken droppings utilized to feed fish. All these activities would have contributed towards bringing about a favorable ecological cycle.

Advanced technology would have been promoted among women farmers using successful rural households to play exemplary roles in the community.

5. Estimated Cost

A total of RMB 3 Million (M) yuan is needed for the project:

- government allocation of 500,000 yuan;
- RMB 1.5 M yuan to be raised by the Women's Federation;
- funds of RMB 1 M yuan from FAO and UNDP.

PROJECT PROFILE

Project Title: **Role of Women in Conserving Water by Drip Irrigation**

Country: People's Republic of China - Inner Mongolia Autonomous Region

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Qu Ruiping, Women's Federation of Wulanchabu Prefecture[1]

Estimated Cost: To be determined

1. Background and Justification

In north China, most parts are arid area with less precipitation, large evaporation and seriously inadequate resources. Because no fresh vegetables are available all year round, a lot of women and children suffer from many kinds of diseases which impair their health. In the arid areas, water is considered more precious than oil. But unfortunately, most areas are still using traditional method of flood irrigation that squanders water and exacerbates the inadequate water resources.

Over the past 4 years, the Women's Federation of Wulanchabu Prefecture of Inner Mongolia Autonomous Region has popularized a drip irrigation skill among the women masses. Women from about 12,600 households have grasped this skill. They plant over 10 kinds of vegetables, such as tomatoes and cucumbers, in their own courtyards instead of planting only autumn vegetables and field crops in the traditional manner. For example, in about 0.2 mu (1mu=0.1644 acre) courtyard land (0.1 mu for tomato; 0.1 for cucumber), one household can produce 9,450,000 kg of tomatoes and 11,080,000 kg cucumbers respectively per annum, which will bring an annual output valued at 7,185 yuan. The average output value of each household is about 600 yuan and net income about 500 yuan. This helps families reach the level necessary to escape poverty.

---

[1] Contact: Qu Ruiping Women's Federation of Wulanchabu Prefecture, C/o Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box. 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. Objectives

i) To emphasize the training of key technical personnel;

ii) To disseminate information and mobilize funds;

iii) To establish experimental units and use them as models to promote work in the area.

3. Activities

Women, who are project participants and beneficiaries, manage over 95% of rural courtyards. Their participation in promoting the skill of conserving water has been widely covered and produced quick results. The women's federation has played a special role in publicizing the project and many women cadres at grassroots level are key members in disseminating this skill. The conservative outlook, low educational levels of women and the inadequate funds available for activities could present obstacles to the project.

4. Expected Results

The drip irrigation method can save 60% water in comparison with the border method of irrigation and the water utilization ratio can reaches 95%. During extraordinarily serious dry years, about 30 cubic water is adequate for 0.2 mu of crops. Saving on water also can enlarge irrigation areas. Besides, the method of drip irrigation can raise the water temperature and facilitate effective utilization of water. The development and utilization of the courtyard economy will also expand the green areas, help prevent environmental pollution, regulate and improve the climate, purify harmful and noxious gas in the air as well as beautify the rural environment.

The impact of women will be significant. Disseminating the skill of saving on water helps learning about the culture and acquiring knowledge on scientific technology. It facilitates participating in the management of the economy and upgraded women's status in the family and society as well as improves the standard of nutrition and health of women and children. The project will reinforce the need to explore the advantages of saving on water resources. The participation of women will give impetus to the popularization of this skill. The potential role of women in spreading all kinds of technologies of saving on water in rural areas will be emphasized. The skill of drip irrigation will be extended in different fields, such as in small orchard, grapes planting, small grassland in pastoral areas, etc.

The project will emphasize the need to set up international training centers for popularizing the skill of drip irrigation and other skills of saving on water and energy, so as to train key members, especially female key members.

PROJECT PROFILE

Project Title: **Training Women on Promoting Ecologically Sound Agricultural Techniques**

Country: People's Republic of China

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Dong Shu Qin, Director, Women's Federation, Yushu City[1]

Estimated Cost: To be determined

1. Background and Justification

A number of women live in areas where a high level of responsibility needs to be assumed for ecologically sound agricultural construction. But, as women's educational level has been traditionally low, it has not been feasible to involve them in such modern agricultural techniques.

The Women's Federation of Yushu city in the Jilin Province has, therefore, organized technical training courses for rural women. Through efforts made over several years, more than 50% of the 184,000 rural women in labour force, developed a satisfactory grasp of few practical skills of modern ecologically sound agriculture. Amongst them, 1,565 women have university or technical secondary school certificates, with a specialization in agro-technique, and 1,445 women have been graded or invited to elementary agronomists.

Chinese women are important human resources in the field of such ecologically sound agricultural techniques. Therefore, to train women and improve their scientific and technical skills is significant in exploiting potentialities of modern ecologically sound agriculture and promoting the sustained community development.

---

[1] Contact: Dong Shu Qin, Director, Women's Federation, Yushu City, Jilin Province, China-130400, Tel: (86-1) 04415-3584.

2. Objectives

i) To form echelon training courses according to the educational level of rural women;

ii) To invite senior agrotechnical experts and specialists to conduct training on systematic ecologically sound agro-techniques to young and middle-aged women with senior middle school educational background; the trainees will be graded or invited to be technicians if they pass the examination;

iii) To invite young and middle-aged women technicians with a high level training to train women with middle school educational background on some special skills;

iv) To organize ordinary training courses for women with a middle school education to popularize the practical skills of ecologically sound agriculture and eradicate scientific illiterates;

v) To launch literacy classes for women illiterates and semi-literates and eradicate cultural obstacles;

vi) To launch a series of educational activities on ecologically sound agrotechniques, such as knowledge competition, exhibition and evaluation of achievements in applied new technology;

vii) To compile and distribute popular textbooks and teaching materials that suit local ecologically sound agricultural construction;

vii) To set up models households of ecologically sound agro-techniques and promote activities in the entire area.

3. Activities

The overall objectives are to involve women in modern ecologically sound agriculture by facilitating and enhancing the role of women's organizations in rural China and the contingent of women cadres to play an important role in organizing training courses for women on the field of ecologically sound agro-techniques. Constraints are anticipated due to women's low educational levels and their low receptive ability to the approaches of modern ecologically sound agrotechniques, the shortage of teachers, teaching materials and training funds.

4. Expected Results

The will promote the sound development of ecological agriculture by providing women with an improved grasp of modern agrotechnology. Recently, the grain output in Yeshu City increased at an average rate of 7.9% a year and fertility of soil raised at a rate of 0.014%. The excessive application of courtyard production has both improved the distribution of crops, increased the species community and beautified the environment. The impact of the project on women will be significant. The methods of traditional management will continue to change in women with the grasp of the new technology. This will help improve women's working conditions, raise their income, increase their ability to participate in community development and upgrade their status in family and society. The project will also reinforce the need to set up special women's fund for ecologically sound agrotechnical training and to establish research institutions of ecological agrotechnical education.

PROJECT PROFILE

Project Title: **Role of Chinese Women in Afforestation and Environmental Protection**

Country: People's Republic of China

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Zhang Hui, Deputy-director, Department of Urban and Rural Work, All-China Women's Federation[1]

Estimated Cost: To be determined

1. Background and Justification

Forest resources cover 12-98% of the area in the country. Excessive felling has brought about deterioration of the ecologic environment. Desert areas show a yearly increase of over 2 million mu (1 hectare=15 mu) and about 100 million mu of farmland are now threatened by the desert. Loss of water and erosion of soil have become serious problems for about 1.3 million square kilometres. Silt content flowing into the river is about 40 to 50 tons every year and loss of composition of nitrogen corresponds to 40 million tons of chemical fertilizer. 7 large rivers and about 3000 lakes, throughout the country, are commonly deposited. The natural disasters of drought, excessive rain, sand and wind have evidently increased which seriously affects the agricultural production, people's life and economic development of the whole society.

2. Objectives

The overall objectives are to devote major efforts to plant trees everywhere and make the country green. In order to develop and exploit women's role in afforestation, at the suggestion of the All-China Women's Federation in Spring 1990, the national activity entitled "March 8th Green Project" was launched which called on women of various nationalities and from all walks of life to participate in planting trees, grasses, flowers and construction of shelter-forests in line with their local conditions. (This activity has speeded up the process of afforestation and improved the country's ecologic environment). The immediate objectives are the following:

---

[1] Contact: Zhang Hui, Deputy-director, Department of Urban and Rural Work, All-China Women's Federation, C/o Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box. 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

i) to mobilize women to voluntarily take part in planting trees;

ii) to launch activities of building commemorative forest and planting memorable trees;

iii) to convert every bit of land green into courtyards and open spaces;

iv) to develop the courtyard forest economy, promote agricultural production and improve life by planting more trees, so that afforestation will be combined with the development of agriculture, animal husbandry, industry and commerce;

v) to organize specialized women's groups and farms to build "Women Green Project" or to organize them to participate in the construction of forest belt, forest net and forest section and in making a road green by planting trees.

vi) to open technical training courses through a variety of methods organized by women's federations at different levels in order to improve their technical level of afforestation and improve the construction and management of the March 8th green base.

3. **Activities**

According to statistics (under completion) in 1990, nearly 130 million women took part in the activity of "the March 8th Green Project" and built about 100,000 projects of "the March 8th Forest", "the March 8th Orchard" and "the March 8th Nursery of Young Plants". Activities will be directed towards enhancing their active roles in agricultural development and improvement of the ecologic environment. Obstacles to the implementation of the project is anticipated due to women's limited technical knowledge of afforestation and the shortage of fund.

4. **Expected Results**

Women will be mobilized to participate in afforestation in a large scale. They will be sensitized on environmental protection and the need to accelerate the process of afforestation and improve the ecologic environment.

The project will be reinforce the need to disseminate the scientific and technical knowledge on environmental protection and afforestation among the women and further strengthen their consciousness on afforestation and environmental protection, so as to give an impetus to this work on a global scale. Besides, new financial resources and investments on afforestation through different channels and methods need to be explored.

PROJECT PROFILE

Project Title:	**Strengthening Women's Capacity to Fight Natural Calamities through Ecologically Sound Agriculture**
Country:	People's Republic of China
Sector:	Rural Development/Agriculture
Duration:	To be determined
Proposed by:	Gao Chuming, Deputy Director of the Women's, Federation of Anhui Province[1]
Estimated Cost:	To be determined

1. Background and Justification

At present, Anhui Province has 51 ecologic agricultural pilots, over a total area of 5.7 million mu (15 mu=1 hectare), which benefits about 1 million people. After introducing ecologic agricultural construction, the grain output increased by over 15%, the output per mu rose to more than 12% and the average per capita output of grain grew to 21.4%. For those who participated in the project, their average income per capita is higher than the average income in the province. The development of ecologic agriculture has also improved the quality of rural environment.

Nearly 10.21 million women throughout the province play a positive role in the fields of breeding, processing, planting trees, fruit trees and grasses, adjusting industrial structure, enlarging the scope of ecologic agricultural construction, bringing the soil erosion under control and beautifying the environment. Women's are not only laborers but also the major force in improving social and natural environment, adjusting industrial structure and enlarging scale of ecologic agricultural construction.

---

[1] Contact: Gao Chuming, Deputy Director of the Women's, Federation of Anhui Province, C/o Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box. 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. Objectives

i) To enlarge ecologic agricultural construction;

ii) to set up multi-agricultural production to help women cast off poverty and strengthen their ability of fighting natural calamities

3. Activities

The project will focus on using the local natural advantages to develop production and adjust industrial structure. Technical training will be provided to women on planting, breeding and processing. Research institutions and agro-technicians will be organised to do a three-dimensional product research.

Efforts will be made to ensure there is enough fund, personnel and fine varieties of grain. Demonstration units will be used to illustrate the advantages of the model.

The obstacles and socio-cultural constraints anticipated will be due to the lack of a common understanding of the advantages of ecologic agriculture because of short-term action in agricultural production; the difficulties in popularizing techniques owing to the low educational level women; and the shortage of fund.

4. Expected Results

The project will contribute to environmental results that stem from developing ecologic, agricultural practices. It will promote development, production and transformation a coordinated process.

The coordinated development of the economy and environmental protection will help improve women's work and living environment, raise their technical ability and create favourable conditions for women's participation in development.

The project will also reinforce the need to set up demonstration units to disseminate the new rural technology and train key female members. It will contribute towards improving women's educational level so they can participate in the economic development and environmental protection more actively.

PROJECT PROFILE

Project Title: **Integrated Demonstration Model on the Role of Women in Environmentally Sound and Sustainable Development**

Country: China - to select 2 or 3 Suburbs in the different parts of the country

Sector: Rural Development/Agriculture

Duration: 5 years, divided into two phases

Proposed by: State Commission on Science and Technology, All China Women's Federation[1]

Estimated Cost: To be determined

1. Background and Justification

The linkages between women, environment and sustainable development is now increasingly acknowledged and understood. Many projects have been submitted on the role and participation of women in sound and sustainable environmental development in specific sectors, such as water, energy, wastes, management, etc., in which women play multiple roles, which are closely linked. In order to assess how women can be involved in accomplishing the objectives of Agenda 21 and to strengthen these integrated roles into development that is sustainable, a few test zones are to be identified are targeted as demonstration models.

Chinese women have played an important role in the socio-economic development of agricultural and household activities in rural areas. They have also made many contributions to the fields of science and technology in protecting rural environment. Yet, there is an urgent need for strengthening the role of women in sound and sustainable environmental development of rural areas. An integrated demonstration model may be developed within a few years (5 years) by the joint effort of the Chinese National Commission for Science and Technology and the All-China Women's Federation with the support of UNDESD. This will be a significant contribution to the women of developing countries with similar backgrounds.

---

[1] Contact: State Commission on Science and Technology, All China Women's Federation, C/o Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box. 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. **Objectives**

i) To increase the sustainability and environmental soundness of specific regional development activities through the promotion of women's role and involvement;

ii) to accelerate systematic and effective integration of women's role in decision making, management, sustainable use and conservation of natural resources through environmentally friendly systems and socio-economic development, etc;

iii) to enhance the technical, organizational and managerial capabilities of women for their effective contribution to sustainable development;

iv) to create a demonstration model for implementing women's participation in environmentally sound and sustainable development in an integrated scale.

v) to improve the quality of women's life by utilizing a variety of techniques.

3. **Activities**

The project will focus on strengthening the participation and involvement of women from different socio-economic and eco-environmental backgrounds. Activities will focus on two regions - southern and northern China, for a target population of 2,000 to 10,000 women, over the next 5 years.

The design, planning, construction, implementation and management of the essential rural aspects will comprise of the following:

i) development of rural energy, such as rural energy resources - biogas, solar energy, biogas digester (south); solar heater (or cooker), energy saving fire-wood stoves (north);

ii) improvement of water and sanitation management, such as improvement of water and lifting techniques, water quality by water purification (particularly for drinking water), formulation of drinking water criteria/regulation and improvement of sanitation techniques;

iii) improvement of solid waste management, such as development of recycling of agricultural/organic waste, efficient utilization of human/pest excrements, development of anaerobic processes and relevant equipments;

iv) improvement of family planning, control of fertility, change of social behaviors - improving life quality and quality of children, involvement in employment to increase professional interests or activities;

v) involvement in implementing eco-economical principles for sustainable land management; study and implementation of ecological planning and eco-economical principles for developing and integrating cropping, animal husbandry, courtyard economy, drinking water management, appropriate use of fertilizers/pesticides, biological pest control, rational development of township/village enterprises and pollution control etc.

vi) development of training and educational programmes at different levels (professional, postal, cultural background, etc.) as outlined below:

- training courses for decision-makers, nationally and locally, at the beginning;
- international or Asian workshop on the general theme (exchange of experiences);
- training course on specific topics for technical women, eg: water and sanitation, biogas, modern methodology or techniques;
- popularization activities for rural men and women;
- educational and cultural activities for illiterate women, students and etc.;
- production and publication of relevant booklets, books, learning materials, video and visual equipments;
- inviting specialized personnel from abroad as consultants, advisers or teachers.

4. Expected Results

Women will play more significant roles that are sustainable and environmentally sound in specific regional development activities. They will be more systematically and effectively integrated in decision making, management, sustainable use and conservation of natural resources. Their technical, organizational and managerial capabilities of women will be enhanced. A demonstration model will be set up on women's participation in environmentally sound and sustainable development in an integrated scale.

The quality of women's life will be improved in the following areas: rural energy; water and sanitation management; solid waste management; family planning; involvement in implementing ecological planning and eco-economical principles for sustainable land management and routine day to day activities; through development of training and educational programmes at different levels.

PROJECT PROFILE

Project Title:	**Women, Environment and the "Information Consulting System for the Introduction of Organisms"**
Country:	People's Republic of China
Sector:	Rural Development/Agriculture
Duration:	To be determined
Proposed by:	Professor Shuqiu Wei, Beijing Agricultural University, Dean of the Land Resource Science Department[1]
Estimated Cost:	To be determined

1. Background and Justification

The technique of introducing organisms serves as an important link to promote the development of economic agriculture but most peasants, especially women, are not aware of it. Some peasants stress developing and breeding new varieties while some others introduce varieties indiscriminately, causing losses. Therefore, the service of "The Computerized Information Consulting System for the Introduction of Organisms" needs to be developed.

Since the development of the "Information Consulting System for the Introduction of Organisms" until 1991, Beijing's Agricultural University had provided 4,951 services with good results. For example, economic benefits have been raised by the introduction of "Ju Feng" grape from Fukuoka, Japan and Olive from Mediterranean. The ecological environment of a large sand area in the south-east coastal sand region of China has been made better by the introduction of the seedling of Casuarina Equistifolia from Thailand.

The technique of the introduction of organisms has played an important role in protecting global environment and it will affect tremendously the agricultural production in which the vast numbers of women are engaged, so it should and must be mastered by the mass of country women. For instance, three woman scientific and technological workers have been promoted to a higher post because of achievements in developing "the System".

---

[1] Contact: Professor Shuqiu Wei, Beijing Agricultural University, Dean of Land Resource Science Department. Tel: (86-1) 2582223 Ext 0253(H), 2582244 Ext 295 (O); Fax: (86-1) 2582332.

2. Objectives

The overall objectives are to strengthen scientific research institutions perfect the "Information Service System for the Introduction of Organisms". The more specific objectives are:

i) to popularize information and skills on introducing organisms through the Departments of Agricultural Science and Technology, and the Women's Federation;

ii) to establish demonstration areas of fine species.

3. Activities

Women, who dominate in "the Service System" research programme, will be the main participants, since country women generally benefit from "the Service System" and offer information for it; besides, 80% of the research workers are female.

The main obstacles are the lack of information from abroad and funds from the country; the failure to do research work jointly in the country; technicians, in general, are inadequate with only few women. They shoulder three types of responsibilities including two kinds of production and service, which over burdens their work load with little opportunities to undertake scientific research work.

4. Expected Results

The major environmental results anticipated are the project's impact on the environment, and the effect of organisms on earth and the natural environment.

Women position as the main force of agricultural production will be strengthened. By way of "service", many will acquire advanced information of technology, increase their economic income, and enhance their social and family status.

The project will emphasize the need to introduce organisms as a global activity in a scientific way, so as to bring about significant environmental and economic benefits to mankind; the potential dangers of implementing it in a haphazard manner will also be highlighted.

It will reinforce the need to establish "the International Service System for the Introduction of Organisms" in combination with colleagues of the world in order to popularize, in time, the new technique for the introduction of organisms; and the importance of setting up "the Introduction of Organisms Foundation", so as to subsidize the research programme and encourage women to participate.

PROJECT PROFILE

Project Title: **Role of Women in the Development of Biological Control Technology and Improvement of Agricultural Environment**

Country: People's Republic of China

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: Professor Shen Gui-fang, Vice-President, Chinese Academy of Agricultural Sciences[1]

Estimated Cost: To be determined

1. Background and Justification

Chemical pesticide control, used in agricultural production, causes many unintended effects, such as pest resistance, environmental pollution and residual toxicity, which is harmful to both the health of human beings and livestock. In rural areas, women are more directly affected for most of pesticide spraying job is done by them. Therefore, biological control is one of the major methods of solving the problem. However, this issue has not received much attention in the country and efforts should be made to develop it.

In recent years, significant progress has been made in the research application of biological control in China. For crop pest control, the total area coverage under biological control has reached more than 300,000,000 mu (1mu= 15 hectares), which covers 10% of the total pest control area. The Institute of Biological Control, Chinese Academy of Agricultural Sciences, has established relationships with 26 countries or areas for exchanging natural enemies and relative information. Since 1979, 235 species of natural enemies have been imported and 150 exported.

Trichogramme is an important genus for natural enemy. It is used mainly to control sugarcane leaf roller Hedylepta accepta and corn borer Ostrinia sp. in southern and northern parts of China, respectively. In 1991, the area coverage using Trichogramma to control corn borer exceeded 7,000,000 mu in the three provinces of northeastern China. The level of reproduction of Trichogramma dendrolimi Matsummura reached 30,000,000 everyday, the accumulative model area of insect dispersing reached 20,000 mu in five years and a 70-90% control effective level was reached. China has advanced significantly in the development of the artificial host egg.

---

[1] Contact: Professor Shen Gui-fang, Vice-President, Chinese Academy of Agricultural Sciences. Phone: (86-1) 8314433-2805, 8313512.

The research and application serves as an antibiotic and is used widely in crop disease control. Every year more than 100,000,000 mu paddy field are controlled by it for Pellicularia Sasakii which is at least 90% effective; furthermore, the antibiotic could maintain 15 to 25 days effectivity. Bacillus thuringiensis, a kind of biological insecticide is most widely used with the applied area of 10,930,000 mu in 1991. BT factories have been put up in 10 provinces and cities, and a majority of the workers are women. In 1991, the total production reached more than 40,000,000 ton.

Significant progress has been made in the study of entomopathogenic nematode recently. In Tianjin City and Lanzhou City of Gansu Province, Steinernema felbiae is used to control wood moths which inroads avenue trees which a 90% of control effective. The ecological and social benefits from biological control of crop pests surpassed the economic benefit.

Female scientists are active participating in the research and application of biological control. For example, in the Institute of Biological Control, CAAS, more than half of the senior scientists are women. Women in rural area are playing major role in applying biological control technologies.

2. Objectives

i) to coordinate scientists and technicians, so as to tackle with key problems and conduct special projects;

ii) to train technicians and instructors;

iii) to spread propaganda and encourage women to apply biological technologies;

iv) to establish trial plots and trial counties, through modelling;

v) to extend concerned technologies small areas to the entire areas.

3. Activities

The project will focus on the application of biological technology to decrease the environmental pollution, eliminate residues in agricultural products and reduce toxins to human beings and livestock; reduce poisoning for women when spraying agrochemicals; improve their working condition and health; and increase participation in acquiring knowledge and skills in the new technology. Experience shows that there is a significant for the protection of the environment by applying biological control technologies for controlling crop pests. Women can play important role in the development of biological control technologies.

The constraints anticipated are the lack of research funds and the need to enhance the quality of people, especially for women who applying biological control technologies.

4. Expected Results

The need to organize an international workshop on biological technologies, conduct international cooperative research and share new biological control technologies will be reinforced. It will emphasize the need to establish an International Biological Control Technology Training and Extension Center, training key researchers, especially female researchers and farmers. It will enhance the need to apply biological control technology and increase the funding for them. It will strengthen the protection of the agro-ecological system and, in the process, benefit women's healthy.

PROJECT PROFILE

Project Title: **Assistance to Rural Women Engaged in Salt Processing**

Country: Global

Sector: Rural Development/Agriculture

Duration: To be determined

Proposed by: United Nations Industrial and Development Organization (UNIDO)[1]

Estimated Cost: To be determined

1. Background and Justification

Salt is an important source of income for women. Yet the methods used to produce it have been not only environmentally destructive but also economically unsound.

With the new implementation of salt production through solar evaporation techniques, larger quantities as well as improved quality salt can be produced in an even shorter period of time.

It should also be noted, from a national level, that industrial large-scale salt production is very limited in many developing nations and large quantities of salt still need to be imported.

From a regional level it can be noted that until recently the traditional salt producing technique required large amounts of wood as the brine had to be boiled over a fire. Consequently, wood has become even more scare, and women have had to walk longer distances to collect the wood.

The increase in earning from the salt production process can make women can become more independent. Until recently, these women have been more dependent on their men, who own the property and the earnings from their fields, although these earnings have not always been consistent depending on the climate, etc. Through this new technology, women will offer a more balanced diet to their families, help with educational costs of children as well as other financial necessities. Besides, this project reduces the workload of women by introducing new labor saving technologies.

---

[1] Contact: Ms. Babette Klais, Women's Unit, UNIDO, P.O. Box 300, Vienna International Centre, A-1400 Vienna, Austria. Tel: (43-1) 211-31-3719; Fax: (43-1) 232-156.

One of the major concerns of UNIDO, in designing these projects, has been the use of technology that is energy-saving, environmentally sound and adapted to socio-cultural conditions of rural women. In many developing countries, traditionally, salt production in villages is done specifically by women alone. UNIDO's mandate attempts to integrate women into industrial development, by developing technical assistance projects, specially targeting these types of women.

The salt content of either spring or sea brine must be analyzed carefully. The density of brine in most springs is 10 Be while those in the sea are much higher. Soils must be tested and the meteorological data as well as chemical composition for brine analyzed and monitored. The most efficient way of pumping the brine (diesel/solar pump) needs to be established with the construction of the solar evaporation ponds.

A meteorological observatory is needed to collect data for the present and future operation of the solar evaporation ponds in the main brine spring area. Instruments such as a rain gauge (for rainfall), anemometer (for wind speed), wind vane (for wind direction), maximum and minimum thermometers, dry and wet bulb thermometers (for relative humidity), stevenson screen with stand (for resting thermometers) and an evaporimeter open type with accessories are all necessary parts of the operation.

Presently brine from the brine springs or sea are carried by women laborers in pitchers or buckets by headload to the places where they process the brine further. This method of transporting brine should be improved. Brine from the springs or sea should be pumped into a brine storage tank and from there be distributed amongst the manufacturers. The number of pumps and storage tanks should be considered carefully.

2. **Objectives**

The long term objectives of the project is to improve women's traditional working methods and conditions in salt production through the introduction of environmentally sound, labor saving technology. More specifically, the project aims:

i) to set up a meteorological observatory so as to collect data for monitoring the present and future operations of the solar evaporation ponds in the main brine spring/coastal area;

ii) to familiarize local producers with the improved process and train them in various operations;

iii) to select sites for location of 10 m2 evaporation pond, observatory, brine and drinking water storage tanks and pumps near the springs/coastal area;

iv) to install meteorological observatory instruments as well as install and put into operation pumps and storage tanks for brine and draining water/construct evaporation ponds.

v) to prepare a detailed manual covering all the operations required for the production process.

3. Activities

The technical viability of solar evaporation techniques will be evaluated. Solar evaporation reservoirs, canals, pipes and pumps will be installed. Local producers will be trained in solar evaporation techniques. A manual on the salt processing will be prepared. Details of activities are annexed.

4. Expected Results

A meteorological observatory will be set up. Data will be collected for monitoring the present and future operations of the solar evaporation ponds in the main brine spring/coastal areas.

Local producers will acquire necessary skills for improved processing in the various operations.

Sites will be selected for the location of 10 m2 evaporation pond, observatory, brine and drinking water storage tanks and pumps near the springs/coastal areas. Meteorological instruments for the observatory will be installed. Pumps and storage tanks for brine, draining water and evaporation ponds will be constructed and operationalised.

A detailed manual, covering all the operations required for the production process, will be prepared.

ANNEX

Activities

1. First Split Mission

1.1 Preparatory studies;
1.1.1 Familiarization with different project areas, study of social conditions, visits to producers;
1.1.2 Analysis of climatical and technical information, i.e., concentration of brine in project areas;
1.1.3 Final selection of project sites, identification of producers and/or paid workers to participate in field test;
1.2 Involvement (preparation/training) of local participants;
1.3 Installation reservoirs for solar evaporation and of canals/pipes and pumps to permit filling of reservoirs with brine;
1.4 First measurements of evaporation;
1.5 Training of local personnel in maintenance of reservoirs.

2. Second Split Mission

2.1 Measurement of results of evaporation, analysis of salinity of brine;
2.2 Planning and preparation of the test of evaporation techniques to be carried out in continuation of solar evaporation. The expert should propose different procedures, e.g., boiling on wood fire, solar evaporation, etc., to compare the results of different procedures;
2.3 Initiation of tests;
2.4 Instruction of local personnel in the different procedures, active participation of experts in carrying out different evaporation techniques;
2.5 First measurements;
2.6 Preparation of local personnel to continue field-test.

3. Third Split Mission

3.1 Measurements, evaluation of results achieved to-date;
3.3 Discussion with local personnel/producers on experience gathered;
3.4 Final analysis of conclusions;
3.5 Final planning of activities to be carried out in second phase of field test;
3.6 Writing of final report.

4. Fourth Split Mission

4.1 Control of condition of reservoirs, canals and pumps
4.2 Filling of reservoirs with brine;
4.3 Analysis of climatic variations;
4.4 Observation of social conditions of producers families.

5. Fifth Split Mission

5.1 Measurement of results of evaporation, analysis of salinity of brine;
5.2 Planning and preparation of the test of evaporation techniques to be carried out in continuation of solar evaporation. The expert should propose different procedures, e.g, boiling on wood fire, solar evaporation, etc., to compare the results of different procedures;
5.3 Initiation of tests;
5.4 Instruction of local personnel in the different procedures, active participation of expert in carrying out different evaporation techniques;
5.5 First measurements;
5.6 Preparation of local personnel to continue field-test;
5.7 Analysis of division of work within producer families.

6. Sixth Split Mission

6.2 Finalization of field-test, measurements, evaluation of results;
6.2 Discussion with local personnel/producers on experiences gathered;
6.3 Analysis of procedures for packaging, evaluation of problems and possibilities for improvement; Training of local personnel in maintenance of reservoirs;
6.4 Evaluation of conditions and problems with regard to storage and perspectives with regard to storage and to provide better storage facilities;
6.5 Analysis of present forms of commercialization and of problems and constraints in the commercialization process and discussion of assistance for improvement;
6.6 Evaluation of market potential;
6.7 Final analysis of conclusions regarding technical, economic and social viability of introducing the technology proposed.

IV. COASTAL AREA MANAGEMENT

PROJECT PROFILE

Project Title: **Women and Coastal Zone Management in Developing Countries**

Country: Global

Sector: Coastal Area Management

Duration: To be determined

Proposed by: United Nations Department of Economic and Social Development (UNDESD)[1]

Estimated Cost: To be determined

1. Background and Justification

Coastal zone management has long been ignored in developing natural resources of countries. In recent years, there has been a greater acknowledgement of the impact an activity can have on a coastal area with regards to the life style of residents and their economic activities. There is an incredible interdependence of various activities present in such management and it affects every aspect of the daily lives of people living in these coastal areas.

Agenda 21 has given new impetus to the needs for coastal zone management and Chapter 17 has outlined 7 areas where programmes can be developed to assist in the protection of the following:

i) Integrated management and sustainable development of coastal areas including exclusive economic zones;

ii) Marine environmental protection;

iii) Sustainable use and conservation of marine living resources of the high seas;

iv) Sustainable use and conservation of marine living resources under national jurisdiction;

v) Addressing critical uncertainties for the management of the marine environment and climate change;

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

vi) Strengthening international, including regional, co-operation and coordination;

vii) Sustainable development of small islands.

In each of these areas, there is a tremendous role for women to participate in management programmes. INSTRAW's background paper for the Interregional Workshop on the Role of Women in Environmentally Sound and Sustainable Development points out clearly that the "linkage between women, the environment and sustainable development (WED) is now increasingly acknowledged and understood". To date, however, very little has been done specifically with regards to the role of women in the area of coastal zone management. FAO has established a group on Women-in-Fisheries. The Women, Environmental and Development Network plans to document and legitimize the knowledge and women's role as managers of natural resources in both traditional and non-traditional contexts. UNIFEM has established a project involving women and a fisheries post-harvesting training. The International Centre for Ocean Development (ICOD), now part of the Canadian International Development Agency, has concentrated on fisheries development in a more concerted way and is now working with the South Pacific Commission in identifying projects which will involve women in coastal zone activities.

Nonetheless, there is little being done in an area which has a potential to be both a conservative and economic stimulus. A more concerted effort needs to be made which will result in the involvement of women in coastal communities and regions which will enhance the planning of the uses of coastal resources and the needs of the communities. It is recognized that the women in coastal communities are a focal point of activities and their input and involvement is critical for planning and implementation of coastal zone programmes. In order to assess and define how women can be directly involved in accomplishing the objectives of Agenda 21, a major organized effort must be made by all aid agencies to assess and define particular projects in regional areas.

2. Objectives

The overall objectives are to provide a more directly involved and participatory role for women in sustainable management of natural resources. The more immediate objectives are:

i) to provide services for the education and public awareness of local population regarding the need for coastal zone management and sustainable use and conservation techniques;

ii) to involve the local communities in the overall planning of coastal zone management programmes;

iii) to define actual programmes that can be initiated in the area which will ensure the involvement of women and the sustainability of resources and use of the coastal area;

iv) to define the training and educational requirements to implement programmes geared to the sustainable use and conservation of coastal resources;

v) to develop economic activities which can benefit the coastal areas;

vi) to define programmes which will improve coastal human settlements with regards to housing, drinking water, sewage, etc.

3. Activities

A target area needs to be defined where the activities of women coincide with the needs of the coastal zone. Initially, there must be an organization of local women's groups who will define the needs, the problems and activities of the target area as it relates to coastal zone activities. This assessment can be used to define the existing and potential uses of the coastal areas and the coastal zone management objectives for that area. Additionally, an appreciation and definition of conservation techniques required to sustain those resources and the ability of the local population to utilize such resources, in an optimum manner, will be a major component of the study. Activities which can be assessed are fisheries (harvest and post-harvest activities), tourism, food production and spin-off business (such as jewelry-making from discarded shellfish). This experience can be used as a case study for the development of other coastal zone management activities in developing countries.

4. Expected Results

Women will be more directly involved in participative roles managing natural resources in a sustainable manner. Actual programmes in which women can be involved will be identified in the areas. The local population will be sensitized and educated on the need for coastal zone management and sustainable use and conservation techniques. The local communities will be involved in the overall planning of the coastal zone management programmes.

Economic activities that can benefit the coastal areas will be developed. Programmes will be evolved to improve coastal human settlements with regards to housing, drinking water, sewage, etc. The training and educational requirements necessary to implement programmes geared to the sustainable use and conservation of coastal resources will be defined.

PROJECT PROFILE

Project Title:	**Including Women's Perspectives in Identifying Coastal Area Resources and Data Base**
Country:	Bangladesh
Sector:	Coastal Area Management
Duration:	To be determined
Proposed by:	Ms. Hasna J. Moudud, President, Coastal Area Resource Development and Member of Parliament, Government of Bangladesh[1]
Estimated Cost:	To be determined

1. Background and Justification

Bangladesh is threatened by environmental degradation of the highest order resulting in increasing cyclonic activity and flooding and the worst victims are women and children. The rate of malnutrition is the highest in the coastal area. Frequent flood, crop loss, water logging, salinity and increasing cyclones and storm surges make the population more vulnerable than the rest of the country. Therefore, the protection of the coastal environment needs to be prioritized.

The coastal area covers one fourth of the total area of Bangladesh. The land area is around 13,000 square miles. If another 40,000 square miles of the Economic Zone in the Bay of Bengal is included, this land becomes the basis for providing resources badly needed in this overcrowded and over exploited country. The resources of this potentially rich area has never been studied, in any detail. This is a priority subject, since positive responses were received from the international community with regards to mitigating the sufferings of the coastal area people who were subjected to environmental disasters.

---

[1] Mrs. Hasna J. Moudud, President, Coastal Area Resource Development and Member of Parliament, Government of Bangladesh, 159 Gulshan Avenue, Dhaka, Bangladesh. Tel: (880-2) 600076; Fax: (880-2) 833161.

Coastal areas constitute a vital part of Bangladesh's frontline struggle against environmental degradation. This makes it imperative to develop an action program of preserving and protecting the coastal environment on a sustainable basis. A multisectoral and integrated approach is needed in order to achieve sustainable development. Because of the remoteness of many of these coastal areas, very little is known of the human needs and potential and unless more is learnt about them, development activities may bypass or, even, harm them. There is a great need for resource inventory including primary survey of many areas, so that it can adequately guide the conservation, development and management of both physical and human resources.

The country's 410 miles of coastal area are vulnerable with an already delicate and fragile ecosystem. To a predicted rise in ocean levels, there appears to be no coherent plan for development on the coastal area. No recent primary surveys of all resources in the whole ecosystem, rapid deforestation, failing shrimp ventures through lack of nutrients, the threatened ecosystem of the Sundarbans, world's largest compact mangroves, endangered animals and plants, inadequate disaster preparedness - all of these make it imperative to prepare a data base and master action plan including pilot projects in conservation. Bay of Bengal is threatened by marine pollution which not only affects the rich living resources of the sea but also the coastal ecosystem including the Sunderbans.

2. Objectives

The overall objective is to provide for a resource inventory that will provide a profile of the coastal area, so that it can adequately guide the conservation, development and management of both physical and human resources. More specifically, the objectives are to conduct a study to identify resources in the coastal area and develop a data base that includes women's perspectives and implementation.

3. Institutional Capabilities

Coastal Area Resource Development and Management Association of Bangladesh, a specialized NGO, will execute the project. UNDP has already conducted a Feasibility Study of the project that was initiated by CARDMA. As the Report lacks women's perspectives, it needs to be revised. The necessary project and background papers will be provided.

4. Activities

A resource inventory that profiles the coastal area will be developed with a focus on guiding the conservation, development and management of both physical and human resources. The inventory will concentrate on 410 miles of coastal area which already has a delicate and fragile ecosystem. The primary survey will cover all resources in the whole ecosystem, rapid deforestation, failing shrimp ventures through lack of nutrients, the threatened ecosystem of the Sundarbans (the world's largest compact mangroves), endangered animals and plants, and inadequate disaster preparedness. A data base and master action plan including pilot projects in conservation will be prepared.

5. **Expected Results**

The issue of protecting the coastal environment will be prioritized. The project will provide an opportunity to study the human needs, resources and potentials of the coastal ecosystem area in detail.

An action programme on preserving and protecting the coastal environment on a sustainable basis will be developed based on a multisectoral and integrated approach, so sustainable development is achieved.

PROJECT PROFILE

Project Title: **Including Women's Perspectives in Environmentally Sound, Sustainable and Integrated Development of Coastal Areas**

Country: Bangladesh

Sector: Coastal Area Management

Duration: Two years

Proposed by: Ms. Hasna J. Moudud, President, Coastal Area Resource Development and Member of Parliament, Government of Bangladesh[1]

Estimated Cost: To be determined

1. Background and Justification

The sustainable development and management of the coastal zones have long been ignored in the development of natural resources of Bangladesh. Coastal areas constitute a vital part of the country's frontline struggle against environmental degradation. This area is vulnerable for living conditions due to cyclone, storm surge, crop loss, salinity, water logging and flooding. Women and the children are the worst victims of natural disasters which occur often. The rate of malnutrition is highest among the coastal population. This makes it imperative to develop a model including women in environmentally sound, sustainable and integrated development preserving the coastal environment on a sustainable basis.

Agenda 21 has given new impetus to the need for coastal zone management and chapter 17 has outlined areas where programmes can be developed which will aid in the protection of such areas and in dealing with the problems and activities of the target area as it relates to coastal zone activities. The activities include local skills such as mat making, sheep and buffalo raising, dairy products made locally, fishing and drying, shrimp cultivation, poultry, plant and vegetable nursery, agriculture, coastal bank embankment afforestation, cyclone shelter afforestation program, education, migratory birds sanctuaries, etc,.

---

[1] Ms. Hasna J. Moudud, President of Coastal Area Resource Development and Member of Parliament, Government of Bangladesh, 159 Gulshan Avenue, Dhaka, Bangladesh. Tel: (880-2) 600076; Fax: (880-2) 833161.

2. Objectives

i) involvement of women's perspectives in all phases and sectors of coastal development;

ii) replicable and integrated development including economic activities which can benefit the coastal areas; and

iii) education and awareness of local communities regarding the need for sustainable use and conservation techniques.

3. Activities

In each of these areas there is a significant role for women's inputs to be included.

Coastal areas will be developed to provide an economic stimulus. Women in coastal communities will be involved as focal points of activities. Their input and involvement will be made critical for planning and implementation of a sustainable and integrated development project.

4. Expected Results

This project can serve a model for other coastal, zone areas in Bangladesh and elsewhere on the role of women in environmentally sound, sustainable and integrated development in coastal areas.

PROJECT PROFILE

Project Title:	**Ensuring Women's Participation in a Flood Action Plan**
Country:	Bangladesh
Sector:	Coastal Area Management
Duration:	To be determined
Proposed by:	Ms. Hasna J. Moudud, President, Coastal Area Resource Development and Member of Parliament, Government of Bangladesh[1]
Estimated Cost:	To be determined

1. Background and Justification

UNDP's 1989 Report highlights women being generally ignored in policy development of water resource development, unless these policies deal with health and sanitation, despite their being the most vulnerable majority in a population and the worst victims in all natural disasters that take place in Bangladesh.

Many water embankment and construction programmes have employed women in construction, repair and improvement of embankments, canals and roads. However, they have not received many opportunities for training in job skills. So, women need to be targeted as beneficiaries of drainage and irrigation programmes; and afforestation and soil conservation are to be incorporated into the FAP. Any initiative in major water management of the magnitude of Flood Action Plan should take into consideration of including women at an early stage of project planning and decision making.

Flood Action Plan (FAP) is the most comprehensive environmental project undertaken in Bangladesh under the U.N. initiative with the World Bank acting as a coordinator. While the FAP has an in-built environmental impact assessment strategy, there is a lack of participation by Bangladeshi women at every stage, which excludes women's role entirely. The perspectives of women of coastal area will also provide important information in connection with the ecosystems of the coastal area and possible actions taken by Flood Action Plan.

---

[1] Ms. Hasna J. Moudud, President of Coastal Area Resource Development and Member of Parliament, Government of Bangladesh, 159 Gulshan Avenue, Dhaka, Bangladesh. Tel: (880-2) 600076; Fax: (880-2) 833161.

2. Objectives

The overall objectives are to incorporate women, who are better caretakers, into afforestation, soil conservation and Flood Action Plans.

The more specific objectives are to provide women with job skills training programme, so their native knowledge and expertise on soil types, river behavior and early flood warnings, etc., may be utilised in their employment on water embankments and construction programmes.

3. Activities

A study to examine involvement of women in planning and decision making, and to identify areas for women's participation, in keeping with UNDP, World Bank and other FAP sponsors' commitment to include women in all development activities as partners.

4. Expected Results

Emphasis will be laid on the importance any initiative in major water management including women at an early stage of project planning and decision making.

PROJECT PROFILE

Project Title:	**Promoting Women's Participation in the Package Projects of Ecological Environment Rectification**
Country:	People's Republic of China
Sector:	Coastal Area Management
Duration:	To be determined
Proposed by:	Tong Cui, Women's Federation, Huaihua[1]
Estimated Cost:	RMB 10,000,000

1. Background and Justification

The project area has been heavily polluted and is facing serious ecological environmental degradation. The water is polluted, soil erosion is becoming worse, drought and floods are more frequent, chemical pesticide application is increasing in an effort to control deteriorating plant diseases and insect pests. As a result, women and children are exposed to contaminated soil and water.

2. Objectives

The overall objectives are to organize women to take part in the ecological environment-rectification package through a project designed by women. The immediate objectives are:

i) to rectify the two mountains and two rivers in Huaihua area;

ii) to bring urban pollution under control and improve the region's eco-agricultural condition;

iii) to improve health care for women and children;

iv) to achieve sustainable economic and social development while protecting and improving ecological environment.

---

[1] Contact: Tong Cui, Women's Federation, Huaihua, Hunan Province, People's Republic of China, Post Code 418000; Tel: (86-1) 234251.

3. Activities

i) Water resources protection: Curbing the pollution of the Wushui River to raise the water quality from the present Rate 2-4 to Rate 2-3 and keep it at this level;

ii) Forest resources protection: Organizing women to carry out afforestation projects and mobilize them to grow flowers and grasses in courtyards or on the balcony;

iii) Building up a 300-hectare pollution-free organic vegetable base, a activity that will be carried out by women;

iv) Building up a 300-hectare vertical econ-Agriculture base alongside Wushui River.

4. Expected Results

Women will participate actively in designing and implementing the ecological environment-rectification package through a project designed by women. As a result, urban pollution will be under control and the region's eco-agricultural condition will be improved. The health care for women and children will be improved. Sustainable economic and social development will result in the process of protecting and improving the ecological environment.

5. Estimated cost

Total investment 10,000,000 RMB yuan.

PROJECT PROFILE

Project Title: **Impact of Sea Level Rise in Chinese Coastal Area**

Country: People's Republic of China

Sector: Coastal Area Management

Duration: To be determined

Proposed by: Mr. Chen Kun, Chinese Society of Science and Technology for Social Development[1]

Estimated Cost: To be determined

1. Background and Justification

As a result of the global climate changes caused by the "greenhouse effect", the seasonal sea level rise will threaten both economic development as well as the safety of cities in littoral areas of the coastal states. This issue has drawn the attention of the international community. Since 1980's, Chinese oceanologic scientists have made many efforts in research on sea level changes. The studies of the global and Chinese coastal sea level data of the past several decades indicate that the global sea level has been rising at a rate of 1.1- 2.5 mm/a and the sea level along Chinese coast has been rising at a rate of 1.4-3.0 mm/a. Meanwhile, the marine geologists have comprehensively analyzed a vast amount of data in the sediment, topographic feature, paleontology and archaeology, and obtained the long-range process of sea level changes in the geologic period, especially since past 15,000 years. For example, the China working group has taken part in the "International Geological Correlation Programme Project No. 200", which contains sea level changes, measurements, correlation and its application in the late Pleistocene. China also published "The Sea Level Changes of China" reflecting study results in the marine strata, sea level changes and the changes of shorelines of Chinese coastal areas in 1986 and in 1988-1992. An important research project "The Tendency and Influence of Chinese Climate and Sea Level Changes", supported by the national scientific fund, is gaining a series of study results.

---

[1] Contact: Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext 916 or 917; Fax: (86-1) 8428175 or 8014854.

The Chinese oceanologists have detected an asynchronous trend of sea level changes in various coastal areas of China since 1950's. There are some differences between the northern and southern littoral areas. The rising tendency is prevailing to the south of the mouth of the Yangtze River but, to the north, the sea level rises somewhere and descends elsewhere. Concretely, the sea level in the coastal area of the Bohai Sea has risen by 2.5 cm during the past 50 years, the sea level of the Yellow Sea has descended by 1 cm and, during the same period, the sea level of the East China Sea and the South China Sea have risen by 9.5 cm and 10 cm respectively.

The IPCC First Assessment Report on global climate change in 1990 indicated that the global sea level rise caused by global climate warming in the next century will be 66 cm, considering some uncertain factors, its range of change will be 31-110 cm. Therefore, IPCC suggests that the coastal states with good conditions start out to study the assessment of vulnerability of their coastal area. At present, most of the countries in the world have not finished their national assessment reports yet, but many have made some experimental studies in key coastal areas. The study of assessment of vulnerability of Chinese coastal areas is just beginning. The report on "The Qualitative Analysis of Vulnerability of Chinese Coastal Areas" and "Case Study of the Sea Level Change in the Bohai Bay, the Laizhou Bay and the Yellow River Delta" have been submitted by the National Marine Information Centre and the First Institute of Oceanography of State Oceanic Administration to the workshop "A Challenge of Sea Level Rise", hosted by Venezuela in March 1992.

The major problem involved in the research on sea level change and coastal vulnerability of China is lack of large scale (1/100,000) digital topographic map. At present, the only one available is 1/1,000,000 scale digital topographic model (DTM), which is derived from 1/50,000 scale and 1/10,000 scale topographic map collecting the elevation data within grids of 28" .125 longitude interval and 18".750 latitude interval (equivalent to 600m x 600m on the spot). Therefore, it is difficult to bring up a contour map of 1 metre interval and this scale cannot meet the space resolution used in the measurement of immersion area caused by 0.5-1.5 metres sea level rise, which is proposed by IPCC. Besides these, the statistic data in detail of economy, society, environment and ecology investigated by the Chinese coastal counties and townships are incomplete, so the reliability of benefit-cost analyses are insufficient.

2. Objectives

The overall objectives are to undertake a research study on the sea level change of Chinese coastal area. The immediate objectives are as follows:

i) to establish a comprehensive data base of sea level change of Chinese coastal areas and the factors that influence it;

ii) to research and provide a comprehensive, regional predicting models of sea level change of Chinese coastal areas and its influence assessing models;

iii) to carry on the assessing analysis of the possible immersed area and the economic loss caused by the sea level rise of Chinese coastal areas and its GIS space display;

iv) to undertake research on the vulnerability of Chinese coastal areas to an accelerated sea level rise; and

v) to conduct research on the response strategies of impacts of sea level rise for Chinese coastal regions and analyses of potential costs and benefits.

3. Institutional Framework

The following infrastructure will be provided for the research study on sea level changes of Chinese coastal areas and its influences: nationwide joint network of tidal gauges; comprehensive nationwide investigation of resources of coastal zone; and studies of sea level change and impacts.

Nationwide Joint Network of Tidal Gauges

In order to ensure the quality and quantity of sea level observation for coastal regions, 104 major tidal gauges with good representative and standard observation were selected, from more 300 tidal gauges under several departments; the nationwide joint network of tidal gauges was implemented to realize the integrated and standard operational management. These tidal gauges have provided facilities to observe the sea level data with high quality for long periods, and nearly half of these tidal gauges have accumulated observation data for more than 50 years, which provides a good basis for relevant scientific researches.

Nationwide Comprehensive Investigation of Resources of Coastal Zone

The comprehensive investigation of resources of coastal zone in a large scale (1/200,000-1/400,000) for 11 provinces or the municipality directly under the Central Government, along the Chinese coast, has been completed during 1980-1987. The investigating range of the coastal zone has been identified as follows: the inland boundary is 10 km from the mean high tide and the ocean boundary is 15 meter isobath. The contents of the investigation included natural resource, geology, geomorphology vegetative cover, soil, climate, hydrology, society, economic status, etc.

The research reports of major items and the relevant investigating atlases have been provided as a result of investigations. During the last decade the following research projects on sea level change and their impacts have conducted in China:

i) The study of global sea level change and its rising rate during the last century;

ii) The average, rate, tendency, the harmonic constant of long-range constituent and the extrapolative prediction of sea level changes for Chinese coasts;

iii) The research on sea level and shoreline changes of Chinese coastal areas since late Pleistocene ;

iv) The tendency and influence of Chinese climate and sea level change;

v) The qualitative analysis of vulnerability of Chinese coastal areal; and

vi) The case study of the sea level change for the Bohai Sea and the Yellow River Delta.

4. Activities

Research on the impacts of sea level change and coastal vulnerability assessment are to be undertaken:

a. The mathematic physical statistic methods and correlation analysis are used to conduct the univariable and multivariable analyses for storm surge, surface subsidence, crust vertical change, transgression, ENSO events and etc,.which cause the relative change of sea level, in order to find their contribution proportions;

b. The numerical simulation combined with the parameter analysis will be used to make the numerical simulation test and to develop the prediction model of change tendency of sea level and the impact assessing model;

c. The GIS technique is used to carry out the space analysis for the possible immersed area and the economic loss caused by the future sea level rise of Chinese coastal regions, vulnerability assessment for Chinese coastal regions; and

d. The method of economic analysis will be adopted to conduct the benefit and cost analyses for various economic and environmental facilities in the area immersed by sea water.

6. Expected Results

The research study on the sea level change of Chinese coastal area will be completed. A comprehensive data base of sea level change of coastal areas and the factors that influence it will compiled.

Comprehensive, regional predicting models of sea level changes of coastal areas and its influence will be designed.
The immersed area and the economic loss caused by the sea level rise in coastal areas will be assessed.

Research will be undertaken on the vulnerability of coastal areas to accelerated sea level rise and on the response strategies of impacts of sea level rise for coastal regions. A cost benefit analyses will be completed.

PROJECT PROFILE

Project Title: **Strengthening the Role of Women in Reducing Marine Hazards**

Country: People's Republic of China

Sector: Coastal Area Management

Duration: To be determined

Proposed by: Bilan Du, Senior Engineer, Deputy Director, China Institute for Marine Development Strategy, State Oceanic Administration[1]

Estimated Cost: To be determined

1. Background and Justification

The coastal region of China plays an important role in the national economy. About 40% of population, 70% of big cities and 60% of GNP are concentrated in this area. But the coastal region frequently suffers from marine hazards, which include tropical cyclone (typhoon), storm surge, huge sea-wave, sea ice, tsunami, red tide, etc. Such natural disasters damage the coastal areas. In 1989, the direct economic loss caused by marine hazards is over 3 thousand million yuan, which is equivalent to 1/8 of the total value of marine products of the year (24,500 million yuan). More than 400 people died from that year's storm surge hazards and above half of casualties were women and children.

Before liberation, in 1949, marine hazards resulted in enormous losses of human lives and properties. For example, a strong storm surge caused by a typhoon attacked the Shantou area of Guangdong province on 2 August 1922 and 70,000 people died. Since the establishment of the People's Republic of China, especially after the "International Decade of Reduction of Natural Disasters" (1990), activities were launched to study the marine hazards and effective counter-strategies were evolved. This contributed to the loss of marine hazards. On 18 July 1989, the area to the west of the mouth of Zhujinag River were affected by the storm, the worst since 1949. About 3.32 million people were distressed although only

---

[1] Contact: Bilan Du, Senior Engineer, Deputy Director, China Institute for Marine Development Strategy, State Oceanic Administration, No. 8 Dahuisi Street, Haidian District, Beijing 100081, People's Republic of China. Tel: (86-1) 8317543; Fax: (86-1) 8313612.

30 people died. The aim of the "International Decade of Reduction of Natural Disasters" is to reduce the loss of hazards by 15-30%.

Marine disasters bring hazardous effects to environment. For instance, the red tide disaster destroyed the offshore ecosystem and cause numerous death of fish, shrimp and shell species; the storm surges and huge sea-waves caused corrosion of the seacoast, salinization of soil in the coastal area and invasion by salt sea-water to the underground water resources, storm huge wave and severe sea ice condition will destroy tankers and oil platforms and cause oil pollution to sea water. So it's necessary to mitigate marine hazards by appropriate measures, which will prevent the pollution and destructions of marine environment.

2. Objectives

i) To organize relevant institutions so research on marine hazards may be undertaken and counter-strategies identified;

ii) To strengthen the construction of marine environmental monitoring and observing network;

iii) To improve the services of marine environmental forecasting and warning, and to establish nationwide marine forecasting and warning system; and

iv) To strengthen prevention, rescue and aid of marine hazards in the coastal provinces.

3. Activities

Women will participate in the design and execution of the project. Since more than 200 million women live in the coastal region of China, marine hazards have a close relation with them and they often confront disasters. Women observers, women forecasters and women engineers will work in the forefront of prevention of marine hazards; and women scientists will be engaged in the research on reduction of marine hazards. With the declaration of the "International Decade of Reduction of Natural Disasters", women play an increasingly important role in the prevention and reduction of marine hazards.

The obstacles and socio-cultural constraints anticipated in the implementation of the project will be due to the low educational levels in women, the lack of necessary protective installations to prevent marine hazards and the inadequate funds available for such activities.

4. **Expected Results**

The impact of the project results on women will be significant. The reduction of marine hazards and the improvement of the environment will have a direct consequence on the rapid development of the marine ecosystem, coastal industry and agriculture. It can subdue the losses of human lives and properties of the coastal residents and increase the residents' income.

Past experience shows the key means of improving the coastal residents' hazard-defence capacity is disseminating scientific knowledge and upgrading the quality of life. The active participation of women should accelerate the process of the various related activities.

The prevention and reduction of marine hazards must be based on science, employment of modern means, strengthening monitoring and forecasting of hazards, further engagement of the research on various marine hazards and adoption of feasible measures and counter-strategy.

The project will reinforce the need to hold international conferences on reducing marine hazards and its counter-strategy, to exchange experiences and import advanced techniques. It will set up a compound data base of marine hazards, to advocate the international exchange of information on hazard reduction. It will also set up a nationwide administrative information system of marine hazards and evaluate the status of the hazards.

V. MANAGEMENT

PROJECT PROFILE

Project Title:	**Role of Women from Shougang Corporation in Environmental Protection**
Country:	People's Republic of China
Sector:	Management
Duration:	To be determined
Proposed by:	Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, Beijing[1]
Estimated Cost:	To be determined

1. Background and Justification

Shougang Corporation, previously known as Shoudu Iron and Steel Company, is a 70 year old enterprise. Through technical reform and diversifying business, it has become a large scale, modern, united, multi-trade and transnational enterprise with iron and steel as its main business. The environment was polluted by the exhausted gas, smoke, dust, drainage water and slag discharged from the plant every year, all of which affected the health of workers, especially women.

Since 1979, Shougang has spent more than 20% of its technical reform fund in environmental protection and development by controlling the exhausted gas, drainage water and slags. It has improved the environment for about 30% of its employees by ensuring clean air, trees and flowers for living working area. Under this proposal omen are to be provided with opportunities to participate in environmental development activities as they have an important role to play.

---

[1] Contact: Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. Objectives

The overall objectives are to improve the environment through technical reforms and make the environment green and beautiful. More specifically, the objectives are:

i) to reduce the discharge of pollutants by adopting new technologies, saving energy and lowering consumption;

ii) to make full use of resources, convert waste into profits and eliminate pollution;

iii) to coordinate both economic growing and environmental development by strict management.

3. Activities

The project will utilize more than 30% of the labor force in environmental protection. They will be involved in decision-making, management, design and operation of the environmental project and its facilities for environmental protection as well as monitoring of the activities.

While the women in SHOUGANG have the same opportunities and conditions as men to participate in environmental protection activities, financial constraints are expected to present limitations.

4. Expected Results

Women in SHOUGANG are direct beneficiaries and participants in environmental protection activities. Since 1979, the amount of smoke and dust exhausted into the air by the plant has been reduced by 50.3%, carbon monoxide 70.6%, so there has been an improvement in the quality of the air. The drop amount of the dust, for example, has been reduced by 79.8%, the total amount of suspended particles by 39.2%, the content of carbon monoxide by 95.4%; the amount of industrial drainage water has been reduced by 41.7% in which the amount of volatile phenol has been reduced by 87.7%, the amount of hydrides by 37.2%, the density of volatile phenol by 94.4% and the density of hyrides by 95.1%. The discharge of six kinds of pollutants from the general outlet has been in compliance with the national discharge standards for 13 years. The percentage of green area covered in the plant has been raised from 7% to over 30%. There are 19 plants honored as the "clean plant" by the Metallurgical Industry Ministry and 2 plants as the "nationwide beautiful plants in environment".

Such significant changes are expected to continue taking place as a result of this project. The project will also reinforce the importance of drawing women into such activities, so opportunities for balanced participation may become a reality.

PROJECT PROFILE

Project Title: **Role of Women in the Exploitation and Utilization of Powder Ash**

Country: People's Republic of China

Sector: Management

Duration: To be determined

Proposed by: Wang Shu Mei, Senior Engineer, North China United Power Company[1]

Estimated Cost: To be determined

1. Background and Justification

China produces coal in abundance; for instance, for 70% of the electricity is fueled by coal. Powder ash from burnt coal in power stations add up to 500 million tons, occupying about 16,675 hectares, which exerts a heavy pressure on electric power and the ecological environment. If they are appropriately utilized, the problems of electric production, environmental pollution and deficiency in resources will be resolved.

In the last five years, powder ash has reached 13,280 thousand tons, dispensed by electric power in North China, which uses coal as the fuel. The rate of its utilization has amounted to 42% (5,660 thousand tons) in 1991, compared to 19% (5,160 thousand tons) in 1988, thereby, the area for powder ash deposits have been reduced and the environmental pollution lessened. In addition, powder ash has supplied a great deal of good quality raw materials to build engineering and chemical industries, which is equivalent to saving over 3 million ton cement.

There are about 25% female policy makers and organizers in the field of the electric power environmental supervision and its management, who are an important force in such tasks.

---

[1] Contact: Wang Shu Mei, Senior Engieer, North China United Power Company, 32 Zaolin Qianjie, Xuan Wu District, Beijing 100053, People's Republic of China. Tel: (86-1) 326-3377-2320: Fax: (1) 326-2123.

Women have generally participated in the selection and proof of the technique scheme of desulphurication, in attempts to control SO2 and particulates from flue gas. The feasibility report is in harmony with national conditions. A preferential loan has already been obtained from the German government. Rapid progress has been made in spreading the application of electrostatic precipitators and, as a consequence, air pollution has also been improved.

2. Objectives

The overall objectives are to make optimal utilisation of powder ash deposits in reducing environmental pollution and simultaneously provide women with enhanced opportunities to participate in activities. More specifically, the objectives are:

i) to organize the technical staff in electric power plants and professional staff in colleges, universities and research units to cooperate in manufacturing and exploiting the new technology and processing equipment, so powder ash can be reused;

ii) to exploit the advanced technological utilization of powder ash and test its using;

iii) to organize the training technique and inquiry service;

iv) to organize the power plant, retrofit the demonstration projects and exchange experiences periodically, so as to use the experience of selected units to promote work in the entire area.

3. Activities

Although not many women work in the electric power industry, women participate as policy makers and organizers, especially among the engineering technique staff and top leaders, in the area of environmental protection of electric power and synthetic utilization of powder ash. However, the limited female work-force in the field of heavy industry and the shortage of funds are expected to present constraints.

Activities will be directed towards making an impact on the environment by using every one-ton powder ash from power plant to reduce 0.33 square metres' area as well as lessen the air and water pollution, so that the waste may be converted into profit.

4. **Expected Results**

Women's confidence and skills in scientific and technical ways of treating the environment, exploiting technology and in heavy industry construction works will continue to increasing.

The project will also contribute to recognizing the increasing number of female scientific and technical staff, a potential force, used in exploiting and utilizing resources in the area of electric power enterprises.

It will reinforce the need to organize a women-oriented "technique service-center for exploiting and using powder ash" in North China, so as to exploit the resources and develop pollution control rapidly. Financial help will be sought from international organizations.

It will highlight the need to establish an "international technique training center of resource utilization" to enforce the training for female engineering and technique staffs.

PROJECT PROFILE

Project Title: **Problems of Women in Environmental Education**

Country: People's Republic of China

Sector: Management

Duration: To be determined

Proposed by: Professor Xiaoyan Tang, Director, Center of Environmental Sciences, Peking University[1]

Estimated Cost: To be determined

1. Background and Justification

Since the higher education of environmental chemistry began in 1973, about 300 graduates, 42 postgraduates and 5 doctors have been trained, by the Peking University, in the field of environmental chemistry. More than 50% of these professionals are women, well accepted by the public, who have since taken up various posts in environmental protection.

Over the last 4 or 5 years, women students are confronted with difficulties in securing jobs. Employers, especially in grass-roots environmental units which undertake operational tasks do not prefer to hire them because of social expectations of their roles, such as marriage and child birth. This discourages women from entering such fields.

As a result, many women students go abroad for studies or give up their aspirations of pursuing scientific careers. This also adversely affects both the quantity and quality of women scientists in the field of environment. Such problems also exist in other fields and affect women's employment, the status of women scientists' and women's position, in general, in the society.

---

[1] Contact: Professor Xiaoyan Tang, Director, Center of Environmental Sciences, Peking University,. Tel: (86-1) 2501925 (office), 2561166-4226 (home); Fax: (86-1) 2564095.

2. Objectives

The overall objectives are to encourage women students, both single and married, to enter the field of science and technology by providing more sustained opportunities. More specifically, the project will aim to encourage professionally qualified women to re-enter the field.

3. Activities

The project will advocate women's rights and problems through the mass media. It will convene international workshops to exchange ideas to promote women's position and contribution. In addition, special training will be organized to provide appropriate conditions for women, who have left the environmental field for several years, to return to environmental professional posts.

4. Expected Results

This project will enhance the opportunity structures for women as it takes into consideration the hard work women put into their families in raising children. As it is based on the assumption that their dedication to career goals is not diminished by their earlier roles; on the contrary, they could play an important role in the management of science and technology

PROJECT PROFILE

Project Title:	**Role of Women Mayors in Environmentally Sound and Sustainable Development**
Country:	People's Republic of China
Sector:	Management
Duration:	To be determined
Proposed by:	Wang Yin Ping, Standing Deputy Secretary-General, Women Mayors Society, China Association of Mayors[1]
Estimated Cost:	To be determined

1. Background and Justification

There are only 250 women Mayors or Vice-Mayors in all the 479 cities within the municipal status of China which accounts for 6% of the total Mayors and Vice-Mayors. However, this trend indicates a keen competition in women for such positions.

The establishment of the Women Mayors' Society enables its members to include concern for the environment and sustainable development, areas that relate to the interests of every citizen, into their various interests. This is specially important as one of the main concerns of the municipal governments is the improvement and protection of its environment. Some women Mayors and Vice-Mayors have made a breakthrough in their work with comprehensive improvements in the environment.

3. Activities

The project will provide opportunities to enhance the role of the Women Mayors' Society in improving the environment. Activities will be launched to alleviate their difficulties in the work.

The experiences of cities like Hangzhou and Guilin, where there has been a positive experience in comprehensive environmental improvement will be used to enlighten the participants on this subject.

---

[1] Contact: Wang Yin Ping, Standing Deputy Secretary-General, Women Mayors' Society, China Association of Mayors, Ministry of Construction, San Li He Road, Beijing, China. Tel: (86-1) 8394200, 8393047; Fax: (86-1) 8311563.

The activities will also benefit from the successes of women mayors hitherto, such as He Nuli (Vice-Mayor of Beijing), Yuan Fenglan (Mayor of Guilin) and Liu Lianei (Vice-Mayor of Shiyian), etc. who have made significant achievements in the field of environmental protection.

Constraints due to traditional and feudal consciousness is anticipated as women compete for such positions at the mayoral levels despite their heavy domestic burden. In addition, a lack of funds exists in for activities in the area of comprehensive environmental improvement.

4. Expected Results

The focus of environmental protection will be on cities. Women Mayors will have opportunities to make decisions for environment and sustainable development in cities. They will have enhanced opportunities to implement the policy on "coordination among environmental protection, economic development and urban construction" in their work.

There will be significant impacts on women from the beautiful surroundings and clean appearances which can enrich their lives. It will also enhance the prestige of women mayors among the masses.

The project will reinforce the need to strengthen the link between Women Mayors Society of China and similar organizations abroad and the need to conduct international conferences on issues of common interest.

It will demonstrate the need to set up training center of environmental protection science where famous scholars and experts are invited to speak.

PROJECT PROFILE

Project Title:	**Role of Women Involved in the Research and Development of Preventive Technology for Traffic Noise Pollution**
Country:	People's Republic of China
Sector:	Management
Duration:	To be determined
Proposed by:	Nie Jiaxuan, Senior Engineer, Institute of Scientific and Technical Information, Ministry of Communications[1]
Estimated Cost:	To be determined

1. Background and Justification

Noise, a social effect of pollution, is mainly caused by traffic. Of the several kinds of pollution caused by road construction, traffic noise is the most serious environmental pollution. In Chinese cities, 30-50% of the environmental noise is caused by road traffic. The traffic noise level is higher than the national standard of 70dBA in about 80% of the main roads. Such serious traffic noise pollution will not only reduce the labour productivity but also harm people's health. The most serious victims are women and children, especially pregnant women. Research shows the rate of worrying because of noise during pregnancy is 20% to 30% higher amongst those unhealthy than in the healthy people.

The China's first road noise barrier was built in 1991 on Guiyang-Huang Guo Shu Highway to reduce traffic noise by 10.5dBA. The Guizhou Technical Institute is located behind this noise barrier, where the environmental noise level is lower than the national standard of 50dBA. The noise barriers and low noise pavements have been built continuously in six provinces or municipalities. This is expected to reduce the noise pollution as well as protect the health of women and children.

---

[1] Contact: Nie Jiaxuan, Senior Engineer, Institute of Scientific and Technical Information, Ministry of Communications, C/o Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. Objectives

The overall objectives are to promote the role of women in the research and development of Preventive Technology for Traffic Noise Pollution. More specifically, the objectives are:

i) to make recommendations for noise prevention by vigorous promotional activities;

ii) to allocated funds for scientific research and noise prevention; and

iii) to facilitate engineers work on theory, research and project design.

3. Activities

Women, the main beneficiaries of traffic noise control, will participate in the design and execution of activities. Most of the complaints about traffic noise come from women. The designers of the first road noise barrier in China were five women. Currently, most of those promoting the cause of noise prevention are women.

The obstacles and socio-cultural constraints anticipated in launching the project activities are that the work of prevention of noise pollution cannot always be understood and supported by the others. Difficulties in mobilizing funds and in acquiring advanced equipments and technology for the purpose of noise prevention and noise pollution still exist. Additionally, it is rather difficult for women to be good house-keepers and engineers at the same time.

4. Expected Results

The reduction of traffic noise will improve the overall living conditions and health of people as it is estimated that about 34 M persons are affected by traffic noise; amongst them, about 27 M persons are now living in an environment of high noise pollution of 70dBA and above. Additionally, the impact on women will be significant as a quiet environment is better for women's health and for raising their children. Preventing traffic noise facilitates participation in social affairs. The need for establishing an international co-operative project the research and development control technology of traffic noise will be highlighted. The results will also focus on the areas for research on the impact of traffic noise on women and children.

The importance of identifying experimental projects in developing countries and combining them with the advanced technology of developed countries to disseminate the information will be emphasized. These activities are already being attempted in China where experimental research on the newly built highways of Beijing, Shenyang, Guizhou and Sichuan are underway.

PROJECT PROFILE

Project Title: **Improving Ecologic Environment in Mountainous Areas by Developing Courtyard Economy**

Country: People's Republic of China

Sector: Management

Duration: To be determined

Proposed by: Tong Chi, Director of the Women's Federation of Huihua Prefecture, Hunan Province[1]

Estimated Cost: To be determined

1. Background and Justification

Huihua Prefecture of Hunan Province is a hilly area where the economic development has always made slow progress. Since 1980s, the women's federations, in cooperation with relevant governments, have organized rural women towards utilizing available resources, so they may develop a courtyard economy and improve the ecologic environment. These efforts have achieved successful results.

Over the last 8 years, women have created numerous small orchards, bamboo gardens, medical herb gardens, nurseries of young plants, small workshops, processing factories, breeding farms, etc. Presently, there are about 550,000 households, specializing in courtyard economy, with women as the main participants. Women in these households have used the open spaces in the front and rear of their houses, to plant over 1.2 million mu (15 mu=1 hectare) of trees or fruit trees and 15,000 mu of flowers and grasses. They have also dug 30,000 mu of fishing ponds. All this has basically changed the ecological environment of the courtyard.

These households make up 68% of the total number of households and produce an output valued, in total, at 1000 million yuan. This represents 35% of the value of the total agricultural output. Besides, there are over 800 villages specializing in courtyard economy with more than 200,000 women and girls making an income of 1,000 yuan. In the past, about 598,000 women labourers have participated in the development of the courtyard economy, utilising 67% of the total rural women labour force. All this reinforces the need for this project.

---

[1] Contact: Tong Chi, Director of the Women's Federation of Huihua Prefecture, Hunan Province, C/o Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. **Objectives**

The overall objectives are to develop a rationally distributed courtyard economy in line with local conditions. More specifically, the objectives are:

i) to formulate supportive policies and measures;

ii) to establish demonstration units specialized in courtyard economy;

iii) to set up the foundations for developing a courtyard economy;

iv) to organize technical training courses on courtyard economy.

3. **Activities**

The Women's Federation at the prefecture, county, township and village levels consider the development of a courtyard economy as their main task. Under the project, they will participate in project design, policy making and setting up demonstration households.

4. **Expected Results**

The development of the courtyard economy will be conductive to casting off poverty and improving the quality of life. The natural economy will be transformed into a commodity economy. A shift in the surplus rural labourers will be accomplished. The women will have opportunities to learn about culture, science and technology and contribute to the beautification of the rural ecological environment.

Lessons learned from the past highlight the significant impact of the results on women, their status in the family and the quality of their health. In addition, they are provided with opportunities of acquiring knowledge and information on current scientific and technological developments. The project will reinforce the significant role that women play in the development of the courtyard economy. It will demonstrate the need to organize international seminars on courtyard economy in order to exchange experiences and techniques. It will set up demonstration units and pilot efforts in the area of courtyard economy. It will also highlight the need to establish International Courtyard Economic Foundations to assist advanced units and individuals.

PROJECT PROFILE

Project Title:	**Integrated Demonstration Model on the Role of Women in Environmentally Sound and Sustainable Development**
Country:	People's Republic of China - to select 2 or 3 Suburbs in the different parts of the country
Sector:	Management
Duration:	5 years, divided into two phases
Proposed by:	Mr. Chen Kun, Chinese Society of Science and Technology for Social Development, Beijing[1]
Estimated Cost:	To be determined

1. Background and Justification

The linkages between women, environment and sustainable development is now increasingly acknowledged and understood. Many projects have been submitted on the role and participation of women in sound and sustainable environmental development in specific sectors, such as water, energy, wastes, management, etc., in which women play multiple roles, which are closely linked. In order to assess how women can be involved in accomplishing the objectives of Agenda 21 and to strengthen these integrated roles into development that is sustainable, a few test zones are to be identified are targeted as demonstration models.

Chinese women have played an important role in the socio-economic development of agricultural and household activities in rural areas. They have also made many contributions to the fields of science and technology in protecting rural environment. Yet, there is an urgent need for strengthening the role of women in sound and sustainable environmental development of rural areas. An integrated demonstration model may be developed within a few years (5 years) by the joint effort of the Chinese National Commission for Science and Technology and the All-China Women's Federation with the support of UNDESD. This will be a significant contribution to the women of developing countries with similar backgrounds.

---

[1] Contact: Chen Kun, Chinese Society of Science and Technology for Social Development, 20 West Chegongzhuan Road, P.O. Box 366, Beijing 100044, People's Republic of China. Tel: (86-1) 8415522 ext. 916 or 917; Fax: (86-1) 8428175 or 8014854.

2. Objectives

i) To increase the sustainability and environmental soundness of specific regional development activities through the promotion of women's role and involvement;

ii) to accelerate systemic and effective integration of women's role in decision making, management, sustainable use and conservation of natural resources through environmental friendly systems and socio-economic development, etc;

iii) to enhance the technical, organizational and managerial capabilities of women for their effective contribution to sustainable development;

iv) to create a demonstration model for implementing women's participation in environmentally sound and sustainable development in an integrated scale.

v) to improve the quality of women's life by utilizing a variety of techniques.

3. Activities

The project will focus on strengthening the participation and involvement of women from different socio-economic and eco-environmental backgrounds. Activities will focus on two regions - southern and northern China, for a target population of 2,000 to 10,000 women, over the next 5 years. The design, planning, construction, implementation and management of the essential rural aspects will comprising of the following:

i) development of rural energy, such as rural energy resources - biogas, solar energy, biogas digester (south); solar heater (or cooker), energy saving fire-wood stoves (north);

ii) improvement of water and sanitation management, such as improvement of water and lifting techniques, water quality by water purification (particularly for drinking water), formulation of drinking water criteria/regulation and improvement of sanitation techniques;

iii) improvement of solid waste management, such as development of recycling of agricultural/organic waste, efficient utilization of human/pest excrements, development of anaerobic processes and relevant equipments;

iv) improvement of family planning, control of fertility, change of social behaviors - improving life quality and quality of children, involvement in employment to increase professional interests or activities;

v) involvement in implementing eco-economical principles for sustainable land management; study and implementation of ecological planning and eco-economical principles for developing and integrating cropping, animal husbandry, courtyard economy, drinking water management, appropriate use of fertilizers/pesticides, biological pest control, rational development of township/village enterprises and pollution control etc.

vi) development of training and educational programmes at different levels (professional, postal, cultural background, etc.) as outlined below:

   * training courses for decision makers, nationally and locally, at the beginning;

   * international or Asian workshop on the general theme (exchange of experiences);

   * training course on specific topics for technical women, eg: water and sanitation, biogas, modern methodology or techniques;
   * popularization activities for rural men and women;

   * educational and cultural activities for illiterate women, students and etc.;

   * production and publication of relevant booklets, books, learning materials, video and visual equipments;

   * inviting specialized personnel from abroad as consultants, advisers or teachers.

4. Expected Results

Women will play more significant roles that are sustainable and environmentally sound in specific regional development activities. They will be more systematically and effectively integrated in decision making, management, sustainable use and conservation of natural resources. Their technical, organizational and managerial capabilities of women will be enhanced. A demonstration model will be set up on women's participation in environmentally sound and sustainable development in an integrated scale.

The quality of women's life will be improved in the following areas: rural energy; water and sanitation management; solid waste management; family planning; involvement in implementing ecological planning and eco-economical principles for sustainable land management and routine day to day activities; through development of training and educational programmes at different levels.

PROJECT PROFILE

Project Title:	**Multi-Function Technical Training for Women in Developing Courtyard Economy**
Country:	People's Republic of China
Sector:	Management
Duration:	To be determined
Proposed by:	Tong Cui, Director, Huaihua Women's Federation[1]
Estimated Cost:	RMB 400,000

1. Background and Justification

Huaihua is located in mountainous area of Southwestern Hunan Province where transportation is very convenient. The area is inhabited by 27 nationalities with a total population of 4.53 million, out of which 1.08 million live in poverty. In recent years, the local Women's Federations have assisted rural women in developing their courtyard economy by making use of the free area in their courtyards and mountainous land resources. Numerous small planting gardens, livestock factories and processing factories have been built. Poverty is being alleviated and, in the process, the ecological environment is also being improved. Currently, women are attempting to grasp the various techniques of planting, raising and processing eco-agriculture.

2. Objectives

The overall objectives are to increase income and alleviate poverty by improving the basic quality of women's education and technique in developing their courtyard economy.

The more specific objectives are to train 1000 technical mainstay women and assist over 800,000 women to master various techniques for courtyard economy production, thus enabling their income to reach RMB 200 per capita.

---

[1] Contact: Tong Cui, Director, Huaihua Women's Federation, ACWF, Huaihua Region of Hunan Province, People's Republic of China, Post Code; 418000. Tel; (86-1) 234251.

3. **Activities**

Between 1992 to 1993, 10 terms of training courses will be organised each with a duration of 20 days for 100 participants, each term.

4. **Expected Results**

Poverty will be alleviate through improved courtyard economy. The basic quality of women's education and technique in developing their courtyard economy would have become enriched.

About 1000 technical mainstay women will have been trained. Over 800,000 women will have mastered the various techniques for courtyard economy production. Their income would have reached about RMB 200 per capita.

5. **Estimated Cost**

It is estimated that about RMB 150,000 will be needed to finance the activities and about RMB 250,000 will be raised fund from the country.

VI. RESEARCH AND TRAINING

PROJECT PROFILE

Project Title: **Training on Gender Sensitive Analysis and Evaluation of Issues Related to Environmentally Sound and Sustainable Development (ESSD)**

Country: Brazil

Sector: Research and Training

Duration: To be determined

Proposed by: Joel Souto-Maior, PhD., Universidade Federal de Santa Catarina[1]

Estimated Cost: US$ 43,000

1. Background and Justification

Experience, both national and international, indicates that relatively few professionals in the developing countries have the capacity to undertake the following:

i) gender-sensitive analysis and evaluation of the actual situation of women in society;

ii) evolution of women's thinking and actions towards a greater role for them in development and environmental policies;

iii) key elements of the feminine perspective which have influenced their strategies towards ESSD;

iv) existing strategies, their accomplishments, government views and reactions to the role of women in ESSD.

---

[1] Contact: Joel Souto-Maior, PhD., Universidade Federal de Santa Catarina, Campus Universitorio-Trinadade, Florianopolis, Santa Catarina 88049, Brazil. Tel: (55-482) 319365 or 319539; Fax: (55-482) 344069 or 319585.

2. Objectives

The long term objectives are to contribute to gender sensitive, sound and sustainable policy design and implementation, promote linkages among women working for government, non-governmental and private sector organizations leading to improved policies related to ESSD and to help women prepare country papers for the Fourth World Women's Conference to be held in Beijing (1995). The immediate objectives are as follows:

i) to develop and strengthen Southern Brazillian women's capability to analyse and evaluate their own overall situation in society;

ii) to collect and present gender-specific statistics;

iii) to sensitize women holding management and policy-making positions at all levels of the government, NGO's and the private sector on the important role that they play or can play in ESSD;

iv) to help them in identifying effective and practical strategies (including good projects) for change that induce women partners in the process of sustainable development.

3. Institutional Framework

The project will be organized and coordinated by a multi-disciplinary team of researchers and practitioners associated with the Federal University of Santa Catarina (UFSC), specifically those belonging to the Public Policy and Planning Post-graduate Programme and the Gender Studies Group. These two institutions will appoint a coordinator and vice-coordinator for the project. For administrative purposes, the implementing organization will be FAPEU, a private foundation linked to the University. The funding agreement will be signed by the Rector of UFSC and the Executive Director of FAPEU. The project will work closely with IBAM and IDAC, institutions implementing related projects financed by Ford Foundation and UNIFEM, respectively.

Guest lecturers and instructors from other governmental and non-governmental institutions will be invited to participate actively in the Project. Among those will be Rosiska Darcy de Oliveira - IDAC; Thais Corral - CEMINA; Carmem Barroso and Maria da Graca Neves - IBAM; Silvia Cavalcanti Arraes - Prefeitura Municipal do Recife; Linda Gondim - Federal University of Ceara; Jalila El Achar - Camara Municipal de Florianopolis; Maria Francisca B. Archer-Mayor of D. Pedrinho; Miriam Prochnow - environmental activist, representative of Santa Catarina in the Brazilian NGOs Forum; Leilah Landim, statistician, and others.

4. Activities

Brazilian women at positions of top and middle management in government, private and non-governmental organizations will be trained, through courses and workshops, to acquire the knowledge and skills necessary for gender-sensitive analysis and evaluation of national, provincial (state) and local issues related to ESSD.

The project activities will be carried out over a twelve month period. During the first two months, the multi-disciplinary organizational team will promote the course, negotiate and detail the course content with the instructors and lecturers, and finalize administrative arrangements; during the next two months, applications from interested women will be analysed and screened for interviewing; in the fifth and sixth months, the 25-30 candidates selected will participate in an intensive workshop. Following this, for the next four months, the participants will return to their respective organizations to conduct research studies and prepare a preliminary draft paper on a theme related to women in ESSD. In the course of preparing the paper, they will apply what they learned in the classroom about the different statistical approaches to policy and strategy analysis.

The last two months of the programme will be devoted to discussions and revisions of the papers from a gender-analytical perspective, using a participatory methodology. The last session of the workshop will be devoted to presentation of the papers by the participants, perhaps to a larger audience. Finally, the participants will have the opportunity to evaluate the relevance of the course and make suggestions for future undertakings. The coordinating group would report on the findings and prepare feedback and analysis to encourage continual up-dating and improvement of the training programme.

The main beneficiaries of the project will be women in middle level management positions with the government, NGOs and private sector organizations, located in the states of Santa Catarina, Parana and Rio Grande do Sul. In the next stage, the project is expected to reach women in other regions of Brazil.

5. Expected Results

The project will contribute significantly to the incorporation and integration of gender dimensions in the process of formulation and implementation of ESSD in Southern Brazil, in a first stage, and in the entire nation at later stages. The anticipated outcomes are:

i) development and dissemination of innovative methodologies and training materials for gender sensitive analysis and evaluation of issues related to ESSD;

ii) development of national and sub-national capacity and skills for gender-sensitive analysis and evaluation of public policies;

iii) promotion of linkage and collaboration among women working at the local, state and regional levels of policy making;

iv) preparation and distribution of 25-30 papers dealing with the thinking, strategies and struggles of women, to relevant organizations;

v) raising the level of consciousness of society on the fundamental role which the feminine perspective can play in ESSD;

vi) contribution to the preparation of the Brazilian papers for the 1995 World Women's Conference.

vii) formulation of specific and mainstream gender oriented programmes and projects related to women, environment and sustainable development.

It is difficult to conceive of sustainable development without sustainable projects. So, this project has the necessary pre-requisites for assured sustainability:

- It will meet a concrete demand for this type of training by the Brazilian women's organizations;
- The extensive experience of the organizational team and the competence of the instructors are a guarantee of the high level of the course and of its success;
- Since the participants are expected to carry out follow-up actions in their respective organizations upon completion of the training, this will lead to facilitate institutions to replicate and extend the course to other regions of the country, with implications for other countries in Latin America.

6. Estimated Cost

		US $
*	Workshop participation: travelling and per diem for participants	15,000
*	Travel, per diem/honorarium of resource persons (instructors and lecturers)	12,000
*	Promotional activities, facilities, equipment, preparation and distribution of papers and report of participant papers and the workshop report	10,000
*	Materials and miscellaneous supplies	2,000
	Total	39,000
*	Grand Total with overhead administrative costs @ 10%	43,000

PROJECT PROFILE

Project Title:	**Making Women Visible - Gender Analysis of Low Technology Extractive Industries in Three Regions**
Country:	Global
Sector:	Research and Training
Duration:	To be determined
Proposed by:	INSTRAW[1]
Estimated Cost:	US$ 244,000

1. Background and Justification

In many parts of the developing world women are involved in low technology extractive industries, but their presence is doubly invisible. They do not show up in national statistics because this sub-sector itself is poorly represented and information on gender distributions in the workforce does not exist. Moreover, women are invisible culturally because mining is considered a male occupation. But information from many sources, such as women's informal sector activity and low technology mining, indicates that many women are miners, either on a full or part-time basis. Nevertheless, this is an area in which women's roles are largely unknown and, therefore, interventions to help them are also constrained.

Women are most actively involved in the smaller and low technology mines, as in quarrying (India), clay extraction (Nigeria and Guatemala), chromate mining (Zimbabwe), diamond mining (Lesotho) and gold panning (Bolivia). These mines can be of different types: cooperatives, artisanal (owned and operated by an artisan), private, informal or illegal.

As miners generally use low levels of technology, productivity levels also tend to be low. Because of access only to a low level of technology, the mines tend to be only surface (although sometimes in channels) deep. Extraction tools are simple (often adapted from agricultural instruments) and chemicals are added with little attention to environmental or personnel safety. The work tends to be arduous and low paid but often requiring considerable dexterity. Although there is little division of labour, women are generally involved in the haulage, crushing and processing of ores.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 685-2111; Fax: (809) 685-2117.

Despite their modest appearance and statistical under-representation, these low technology mines often play an important role in the manufacturing and inputs to their domestic economies. Quarried rock is essential to most construction and road-building work; clay is the key input to rural pottery making; while raw chromium can be fed into the industrial mines processing plants to produce chromium ore for export or for the domestic steel making industry. Due to the increased need for foreign exchange, governments are beginning to recognize this sector of mining as an area for growth and profit. With the current trend to denationalize large-scale mines, the prospects of these smaller and low technology mines filling in the void in the areas where large scale mining is not profitable is heightened.

Without the introduction of technical support, credit and marketing channels, these low technology mines will continue to remain marginal. However, the introduction of more advanced technology, intimidates the position of women. At present, women are employed in the most menial, expendable and lowest paid positions. Their work is often seasonal and usually involves very little training. The introduction of even simple technology, such as for carrying rock from the mine face to the grinders, can displace women. Therefore, caution must be used in the choice and use of technology, so they will not have a negative impact on the role of women. This necessitates the timely intervention of government, NGOs or external agencies, to ensure appropriate results.

The environmental impact of mining is another important factor. Because many poisonous and caustic chemicals are used to purify and process the minerals, the workers (both males, females and sometimes children) are directly exposed. The surrounding population are often affected by poor disposal techniques, e.g. pouring of toxic substances into streams in the neighbourhood. Again, the introduction of new technology, which often means more specialized equipment and inputs, needs to be undertaken with consideration of the disposal of waste, impact on surrounding farming areas and the health and safety of the workers. Because so many of the smaller mines, especially those which are operating without official approval, have little awareness of these factors, it is crucial that an external agency attend to these concerns.

2. Objectives

The long term development objective of the research project is to enable the poor to achieve sustainable livelihoods by increasing women's opportunities for gainful employment in extractive industries and improving their economic productivity and prosperity while mitigating environmental degradation from these activities.

Making women's work in the informal sector more visible, with special reference to their roles in the low technology extractive industries, by including data on these activities, routinely in national accounts, for use by policy makers, planners and donor agencies. This will provide the necessary data for identification and design of supportive policies, programmes and projects.

The immediate objectives of this research is to obtain basic information utilizing available data and in-depth field studies, on previously ignored and undocumented economic activities, to better understand the major barriers to advancement and profitable employment for women in the low technology mining sector. Particular attention will be paid to the levels of technology presently being used and the environmental impact of activities. Potentially, this information can be used by national policy makers and by NGOs in the North and South as well as bilateral and multilateral agencies endeavoring to improve the lives of the marginalized populations in the developing world.

3. Institutional Capacity

The research project will be jointly carried out by INSTRAW, UNIFEM and UNDESD in close coordination with interdisciplinary partnerships of local researchers from the social sciences with a knowledge of WID and natural resource specialists with expertise in low-technology mining. National policy makers, development planners, statistical offices and NGOs will assist the local researchers and will, in turn, benefit from the findings.

4. Activities

Stage 1 of the research will comprise of the collection of available data, in each of six selected countries in three regions, by local researchers using guidelines developed by UNDESD and INSTRAW. Emphasis will be on locating and analyzing gender-disaggregated information concerning economic roles, working regulations and conditions and compensation to examine how women are integrated into the sector.

Stage 2 of the research will comprise of a collaborative research design workshop for the local researchers from the six countries. First, techniques for interpretation of the available information collected by local research teams will be explored and gaps in data that need to be filled through the collection of primary information will be identified. Subsequently, research teams will be assisted to design field data collection and gender analysis strategies through a case study or small-scale survey in a chosen area or areas where women are active in low-technology extractive activities in their countries. Emphasis will be on choosing a variety of low technology extractive industries, ranging from those closely interconnected with formal, export-oriented mineral extraction to those entirely artisanal in nature and which provide materials for local markets and consumption such as quarrying and salt mining. Experiential training in primary data collection concerning low technology extractive activities will be provided on site during the workshop.

Stage 3 will comprise of a three month period during which the primary data collection instruments will be refined, through field testing in the actual contexts where they will be employed, and in-depth case studies/small-scale surveys will be carried out to provide more information on women as miners and on the gender differentiation of tasks within the sector on specific sites.
Stage 4 will comprise of a follow-up workshop of the local participant teams where training and assistance will be provided in making effective presentations of findings for policy makers, planners, and programme and project designers. Stage 5 will involve the editing and publication of a book highlighting women's economic role in low technology activities by INSTRAW, UNIFEM and UNDESD.

5. Expected Results

Preliminary reports of the findings will be drafted by each local research team. Data will be presented on the types of extractive industries in which women are involved (eg. precious and semi-precious metals and stones, industrial minerals, building materials, etc.), the percentages of women involved in the sector and at what levels, compensation in comparison to men in the same sector and women not in the sector, the legality and formality of women's participation in these enterprises, marketing structures and systems. The availability of credit for small scale mining, the technology utilized, environmental impacts and health implications will also be examined. The publication, highlighting women's role in low-technology activities, will be translated into Spanish and French. A video presentation, summarizing the salient findings, will also be produced and made available in three languages.

6. **Estimated Cost**

In-house resources in terms of staff time will be contributed by UNIFEM and the UN Statistics Division. Additional costs include the following:

- Research coordination-INSTRAW professional staff part-time (6 w/m) US$ 30,000
- Natural resources low technology mining consultant for data collection design and training (3 weeks) US$ 5,000
- Organization of 2 week workshop for training 12 local researchers with 4 facilitators including room and board US$ 20,000
- Cost of international travel for 12 researchers plus UN Statistics Technical Assistant, 2 INSTRAW Research Staff and a Natural Resources low technology mining consultant to the 2 week training workshop US$ 36,000
- In-country costs of data collection and case studies including fees of 2 local researchers in each of six countries US$ 42,000
- Communications consultant on effective presentations (2 weeks) US$ 3,000
- Organization of second training workshop in New York (1 week) (contributed by UNIFEM, UN Statistical Division
- Cost of international travel and DSA to New York for 14 local researchers, 2 INSTRAW staff and INSTRAW Director for second workshop US$ 60,000
- Communications, secretarial support, office supplies, etc. for project coordination US$ 10,000
- Publication of book/report (INSTRAW) including editing and translation into Spanish and French US$ 18,000
- Video production and translation US$ 20,000

TOTAL.................................... US$ 244,000

PROJECT PROPOSAL

Project Title: **To Supply Libraries to go on CD-ROM to Women Research Centres**

Country: Africa, Asia

Sector: Research and Training

Duration: To be determined

Proposed by: Bettina Corke[1]

Estimated Cost: To be determined

1. Objectives

The long term objectives are to support and supply current information and research to researchers and practioners in English speaking Africa and Asia. More specifically the objectives are:

- to facilitate access to the data bases in full text and include the research and publications in all three updates of these Libraries-To-Go;
- to improve the opportunities for full text research and cross-referencing by extending existing library holdings to include these CD-ROM Libraries-To-Go in both the North and the South;
- to share, on a more equitable basis, between North and South Women-in-Development and Environmental Health information and to offer authors from the South the possibility of entering the mainstream debate by including their work in these Libraries-To-Go CD-ROMs.

2. Activities

To support and supply current information and research to researchers and practioners in English speaking Africa and Asia. To offer these research centres the opportunity to access, within country, these data bases in full text and to include their research and publications in all three updates of these Libraries-To-Go. Activities will be launched by Women-in-Development

---

[1] Contact: Ms. Bettina Corke, President CD Resources, Inc., and Board Member and Chairperson of the Taskforce on Communications for US Council for INSTRAW, 47-49 E. 65th Street, New York, NY 10021, USA. Tel: (212) 580-2263; Fax: (212) 580-2263.

Agencies, Women-in-Development Ministerial Departments, Ministries of Health, Ministries of Science and Technology, and Ministries of Community Development.

3. Expected Results

Researchers and practioners will be supported by the project activities. Research centres will have the opportunity to access in-country data bases.

Opportunities for full text research will be improved and information will be shared on a more equitable basis.

VII. SCIENCE AND TECHNOLOGY

PROJECT PROFILE

Project Title: **Technology Assessment and Management Training Programme for Asia/Pacific Region**

Country: Global

Sector: Science and Technology

Duration: To be determined

Proposed by: United Nations Department for Economic and Social Development (UNDESD)[1]

Estimated Cost: US$ 102,000

1. Background and Justification

The Asia/Pacific region is undergoing rapid economic development accompanied by technological changes that make considerable impact on society and the environment.

Technology assessment as well as other forms of impact assessment are necessary and integral management tools of decision-making. They can contribute to:

i) our understanding of relationships between society and environment;
ii) the rational management interactions between people and their environment, including their ability to design, develop and carry out carry out projects involving technological change; and
iii) finding solutions to environmental problems.

Participants will be professionals actively involved in decision-making on technologies and technology policies in their countries. They may represent public or private entities in which they can directly apply the training received.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

This project builds on several years experience of the Science and Technology Branch for Science and Technology for Development (formerly the Centre for Science and Technology for Development) in endogenous capacity-building, technology assessment and the assessment, in particular, of environmentally-sound technologies.

Through projects as well as through separate bilateral arrangements, the Branch has been organizing stakeholder policy dialogues in ten developing countries in order to assist those countries in identifying and prioritizing activities to make optimal use of science and technology for development. Several of the countries involved have, through this dialogue process, emphasized the need to strengthen their capabilities in technology assessment and management.

The Branch also has a long-standing programme, the Advanced Technology Assessment System (ATAS), which has attempted through international workshops, publications and a network of institutions to assist developing countries to conduct and to institutionalize technology assessment at the national level. In response to the Branch's (then Centre's) role in this regard, the General Assembly (GA) in its resolution 44/14 (1990), entrusted the Branch, through ATAS and in co-operation with other United Nations system where possible, to sustain relations with governments and NGOs concerning technological assessment activities in Member States.

The demand for assistance in technology assessment has been made manifest through ATAS and the GA. Furthermore, it has become clear that, while ATAS has concentrated on assessments at the international level, the demand for technology assessment at the national level is increasing, particularly in relationship to the capacity-building aspects of technology assessment.

2. Objectives

To train personnel from the various technology assessment and science policy institutions in the application of technology and impact assessment of specific programmes.

3. Activities

The training course for professionals from private and public sectors involved in technology choice will consist of three elements:

- A training workshop guided by experienced practitioners in the areas of technology assessment and management, to be held in Shanghai 7-9 June 1992;
- On-site field assessment of development/impact issues in the Pudong New Area (Pudong, Cjoma 10 June 1992);

- Participation of all trainees in the international meeting "Development and the Environment", organized by the International Association for Impact Assessment (IAIA) in cooperation with the Shanghai industry Foundation (Shanghai, China 11-15 June 1993) with the State Science and Technology Commission of China being the official host.

The International Association for Impact Assessment (IAIA), an NGO in consultative status with the Economic and Social Council of the United Nations (ECOSOC), the Shanghai Institute of Science and Technology Management and the Shanghai Industry Foundation, will organize the 1993 IAIA workshop focussing on "Development and the Environment". It will be held in Shanghai, 11-15 June 1993, with the State Science and Technology Commission being the official host. The event is designed to act as a forum to exchange ideas and experiences on the application of technologies and impact assessment to issues of science, technology and sustainable development. Leading experts in the field of technology assessment will attend. Taking advantage of this occasion, the Science and Technology Branch of DESD discussed, informally with IAIA and the Chinese representatives, the possibility of linking the meeting with a four-day training course for 30 professionals, from China and other Asian nations, in the area of technology assessment, technology choice, and science and technology capacity building.

The training course would be organized by UNDESD, based on its experiences and networks, in the areas of endogenous capacity building in science and technology, and technology assessment. The proposed training course will include a three-day lecture and discussion session, a field assessment and participation of trainees in the four-day IAIA meeting. The pre-meeting training course will emphasize methodological and planning tools while the workshop itself will focus on specific applications of technology assessment, in areas such as key emerging technologies, economic development, environmental assessment, risk assessment and technology co-operation. The field assessment will be concerned with discussing and evaluating the large engineering projects currently under construction or being planned in the Pudong area, near Shanghai. It is planned to involve six lecturers, each of whom would provide a half-day training element as well as make available a resource person for additional input during all other sessions. The field excursion will be guided by Chinese experts. 30 trainees, 15 each from China and from other parts of the region, will be selected from among professionals currently working in the field. They will participate fully both in the course and the workshop.

International concern about the social and environmental effects of development has been growing. Perceptions on development has changed and there is increasing concern for dealing with the consequences of economic growth, particularly the effects of rapid urban and industrial expansion. The current concepts of development refer to the importance of integrating social, economic, environmental and health concerns with economic goals, such as within the UNCED, the UNDP "Handbook and Guide-lines for Environmental Management and Sustainable Development", the World Bank's "Environmental Assessment Source Book" and DESD's publication on "Environmentally Sound Technology for Sustainable Development" published by its technology assessment programme, the Advance Technology Assessment System (ATAS).

Capacity-building, a basic management problem in developing countries, requires researchers, planners and decision-makers who have had the concepts and practical skills to assess and mitigate the social and environmental impacts of economic and technological development and to apply assessment and other analytical procedures to problems of environmental management.

At the same time, governments increasingly need to make choices that reflect a comprehensive model of development rather than concentrating solely on economic factors. But they are faced with numerous constraints in this respect, including, inter alia:

* An inadequate number of skilled personnel to undertake technology and environmental assessments in the broadest sense, including social, health and economic factors;

* The lack of research and baseline information about areas in which development projects are planned;

* The training course on Technology Assessment Management, which forms part of this project, seeks to address these constraints.

The Project review, reporting and evaluation are to be completed within 8 weeks following the course.

4. **Expected Results**

At the end of the project, the various technology assessment and science policy institutions, from which the workshop participants are drawn, will have trained personnel in the application of technology and impact assessment to specific programmes.

5. Estimated Cost

Government input into the project will comprise of local organization, the provision of local staff and hospitality costs. The UN input will include the selection of lecturers and participants; substantive preparation (in co-operation with IAIA and Chinese partners); provision of budget for lecturer's costs (honoraria, per diem, travel) and for participants (travel, per diem, registration fee) during training course, field trip and workshop; provision of training materials; coverage of local expenses not provided by the government.

Travel & per diem of 15 participants other Asian countries	US$	35,000
Fee for IAIA workshop (30 participants)		9,000
Honoraria for 6 lecturers and background papers		6,000
Travel/per diem of 6 lecturers		30,000
Local costs (equipment,travel to field station, meeting facilities, based on estimate by local partners		5,000
Miscellaneous expenses/emergencies		2,000
Travel/per diem of 3 UN staff		15,000
Total		102,000

PROJECT PROFILE

Project Title: **Strengthening Women's Participation in Formulating Science and Technology Policy for Sustainable Development**

Country: Togo

Sector: Science and Technology

Duration: To be determined

Proposed by: United Nations Department for Economic and Social Development (UNDESD)[1]

Estimated Cost: To be determined

1. Background and Justification

The application of technology could lead to both environmental degradation and sustainable development. Without underestimating other factors, in particular social factors, environmental problems are largely the result of technology choices. Thus, the proper choices, application and management of technologies is central to the issues of ecologically sustainable development.

The social status of women in many developing countries, specifically in the African region, places them in a position where they are at close interaction with the environment. Most of the workforce in the agricultural sector in Africa are women. In some countries, it may reach 70% of the total workforce in the sector. However, due to poverty and the need to satisfy their legitimate needs, they tend to apply technologies that produce emissions, consume products and are ecologically unsustainable.

Although women contribute extensively to ecological sustainability, they still are rarely integrated in policy decision-making on economic development, in general, or decisions on adaptation and management of technologies, in particular. Income-earning opportunities, income level and working conditions as well as the life styles, in general, of large groups of women may be changed.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

Endogenous capacity building is the pillar upon which proper application of technologies is laid. The key issue of endogenous capacity building is the development of human resources through education and training, put into action on the basis of a continuous cooperation and interaction between stakeholder. In this context, informed judgement and actions regarding the acquisition, deployment and generation of technologies for economic and social development, including the fulfillment of basic human needs, are necessary for sustainable development within a society.

Sustainability of development requires continuity and resilience of policies. Consensus-building, between all those affected by the applied technology as well as the participation of grass-root people, such as women, is essential for proper decision-making processes as related to technology.

In this context, CSTD proposes to undertake a project in Togo as part of the series of endogenous capacity building projects but with a special focus on bringing women and their issues into the policy-decision making of Togo. Togo is one of the countries which is currently carrying out a pilot project on endogenous capacity building and the Togolese government has already expressed a strong interest in the role of women in science and technology.

A policy dialogue among technology producers, government organizations and grass-root people is indispensable. The dialogue should lead to an agenda of national priorities for science and technology. The presence of CSTD in the organized dialogues, on a neutral ground, helps to facilitate an open exchange of views and, thereby, identify common priority areas to which all could agree.

2. Objectives

i) to assess the extent of women's access to land, raw materials, knowledge on available technologies, especially, environmentally sound technologies, training, credit, transportation, extension services, etc;

ii) to develop an information sharing system for women (at the grassroots level) and the environment on different sustainable technologies;

iii) to assess the level and quality of existing training programmes, extension services and women's involvement in the decision making process within the sub-project training needs of women in relation to the adaption of technologies;

iv) to establish mobile technology demonstration centres and training centres that should be geared towards the specific needs of women;

v) to enhance the awareness of policy-makers on the significant role women play in protecting the environment and on the importance of integrating them and their needs in science and technology policies;

vi) to promote policy dialogues among stakeholder in the development of science and technology, especially women, at national level;

vii) to prepare a set of prioritized initiatives to ensure women's active involvement at various levels of policy, planning and analysis of science and technology programmes in the context of sustainable development as well as in the implementation, monitoring and evaluation of these programmes; the initiatives would also include proposals for specific science and technology programmes reflecting the most urgent environmental problems as they have been identified in the dialogue process.

3. Activities

Preparatory Phase

A preparatory mission will be undertaken by CSTD to (i) familiarize the country with the concept of endogenous capacity building and sustainable development; (ii) obtain the support of local partners and national authorities; (iii) elaborate the terms of reference and the detailed work programme; (iv) recruit a national project co-ordinator responsible for the over-all project implementation and monitoring; (v) identify local experts and institutions; and (vi) to work out the administrative arrangements.

Implementation Phase

This phase will firstly include the implementation of the information sharing system for women and the environment. It will also include data collection, analysis and specific thematic studies in preparation for the policy dialogue. Local experts, hired as consultants, will interact with government officials, development planners and national NGO's in preparing in-depth studies on relevant themes as inputs for two rounds of policy dialogue meetings. If necessary, international consultants will also be recruited. A monitoring mission by CSTD will take place in the interim period. The actual meetings among selected stakeholder will discuss the priorities in science and technology as they relate to women and the environment in the national context. These dialogues are expected to produce the necessary consensus for preparing a portfolio of prioritized initiatives.

Evaluation Phase

The evaluation will be carried out under the overall project evaluation exercise. Here, the results of the project will be presented to governments in order to obtain their comments on the project and to acquire their recommendations on extending this idea to other countries. CSTD would cooperate with interested United Nations specialized agencies, such as UNEP, ILO or INSTRAW and the National Steering Committee, in identifying local experts to carry out the in-depth studies, preparing the terms of reference and guidelines for the project as well as establish methodologies and time frames for the quality and rate of progress during the implementation phase. All the parties concerned would participate in the evaluation phase.

4. Expected Results

The following main outputs are expected:

i) An information exchange system for women and the environment. The system should be continuous and eventually run by itself.

ii) Analytical reports examining the situation of women regarding the training, extension services; examining the actual potential involvement of women at various levels of decision-making in science and technology matters.

iii) Suggested measures to ensure that national development objectives and strategies incorporate women's concerns and that the political commitment be translated into action.

iv) A set of initiatives including policy recommendations as well as ideas for concrete programmes to be supported by national authorities and bilateral donors.

PROJECT PROFILE

Project Title:	**Information Sharing System for Women and the Environment**
Country:	Global
Sector:	Science and Technology
Duration:	To be determined
Proposed by:	United Nations Department for Economic and Social Development (UNDESD)[1]
Estimated Cost:	To be determined

1. Background and Justification

Provision of information is the most crucial element upon which science and technology system depends. Major progress may come with the development of new kinds of interfaces between users and information systems. The benefits to be derived from information sharing may be extended to a wide range of users who are not information specialists, for example grass-roots women, when the information system is user-friendly or when specialized services are offered to facilitate access. Other than being a step forward towards strengthening women participation in formulating science and technology policies for sustainable development, in the short to medium term, this service will expedite the proper management of natural resources by promoting environmentally sound technologies.

2. Objective

To establish a data base system by which information on going success stories is constantly disseminated among women in developing countries.

3. Activities

As an application of knowledge to practical processes, UNDESD proposes to establish a data-base system by which information on on-going success stories is constantly disseminated among women in developing countries. The data-base system will be geared to grassroots women in Africa, Togo in particular, where UNDESD is currently monitoring an endogenous capacity building project. Information on each success story should be provided in simple, straightforward manner both in English and in French. This data will be collected from the country where the technology was originally developed. The data will include the following types of information.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

The Technology

a. Name of contact partner
b. Address
c. Environmental problems faced prior to adopting the technology
d. Brief description of the technology
e. Environmental impact of the technology; in other words, how did the technology answer for the environmental concern?

Technical Issues

f. Technical, financial, social, cultural and other problems encountered during the development of the technology.
g. Cost of technology
h. Means by which the technology was disseminated among other women
i. Funding. Here the following information will be included: (i) the funding body, (ii) address of the funding agency, (iii) how they were approached?

Adaption Issues

This section will be formulated after answering women's inquiries about certain aspects of the technology. Since not all technologies are easily transferred to and adapted in other countries, this section may prove indispensable. However, it will require continuous follow-up and research.

j. Cultural issues hampering adaption of the technology and other options. For example in certain countries and as a tradition, women can only have one cooking stove in a lifetime.
k. Financial problems and solutions.

Other problems may appear as the project progresses and will be studied and included in the data-base.

Collection

Names and addresses of a number of success story presenters are available through the Miami, Florida meeting - Global Assembly of Women and The Environment. Additionally, a summary of each success story including some of the answers to some of the questions proposed above, such as source of funding, description of technology, cultural, social and other problems faced is also available.

Although success stories presented in the meeting (Miami) do not cover each and every country, there are sufficient numbers. Women may be asked to identify other success stories in their respective countries.

A contact partner or a focal point in each of the countries should be found. The ideal focal point should be the local project coordinator. The project coordinator should work and consult with the national Endogenous Capacity Project Coordinator. This person would be responsible for distributing the data among community and church groups, schools etc., and would be the link between the data processing body and the focal point. UNDP field offices may play an important role in identifying the focal point - preferably a woman.

Dissemination

After collecting information on environmental issues in different countries, they will, in turn, be sent to the focal point through UNDP offices. Information would be distributed among different community and women's groups, schools or any other bodies that may play an important role in the community. It would be expected the women will spread the knowledge acquired by word of mouth to other women in the community.

Refining

At this stage, inquiries of recipient women would be researched and answered by different experts. Then, information would be re-disseminated.

4. **Expected Results**

The participation in formulating science and technology policy for sustainable development would have been strengthened. The proper management of natural resources by promoting environmentally sound technologies will have been expedited.

Women will have been sensitized on environmental problems in a fast and efficient manner. The dissemination of economically sound, ecologically sustainable and endogenously developed technologies would have been expedited.

In the long run, the health of families, and eventually the community, would have improved. The natural resource base at the local level will be better managed. On the whole, these efforts would have contributed eventually to local sustainable development.

VIII. MICRO-ENTERPRISES/CONSTRUCTION

PROJECT PROFILE

Project Title:	**Impact of Women's Participation in Credit Projects in the Development of Productive and Viable Micro-Enterprises**
Country:	Global
Sector:	Micro-enterprises/Construction
Duration:	2 years
Proposed by:	INSTRAW[1]
Estimated Cost:	US$ 295,300

1. Background and Justification

The provision of credit to stimulate microenterprise development in the informal sector is currently a major development strategy. INSTRAW has completed a series of research studies which are summarily compiled in a volume on "Women and Credit" (1990). Currently INSTRAW is emphasizing on impact evaluation of key development assistance interventions in a comparative model to accumulate knowledge about gender inputs and impacts in development projects and to promote the inclusion of gender issues and data in programme/project planning, implementation, monitoring and impact evaluation. A baseline survey of the WID dimension in the evaluation strategies of UN organizations has been completed recently (1989/90).

2. Objectives

The development objective is to enable the poor to achieve sustainable livelihoods by increasing the understanding of factors involved in bringing about enduring positive outcomes in terms of viable micro-enterprises (See Agenda 21, Chapter 3). The immediate objectives are:

i) to carry out research in active collaboration with development assistance agencies building on the existing evaluation work of USAID, the World Bank and others; and

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel (809) 685-2111; Fax: (809) 685-2117.

ii) to examine the effectiveness of different approaches to assistance depending on the presence or absence of a selected number of collectively identified variables.

The main focus will be on the provision of capital in the form of credit or grants to stimulate microenterprise development. A key independent variable is the extent to which women are integrated into projects at the identification, planning and implementation stages. Other factors such as training in management and credit and skills required for micro-enterprise development, including marketing analysis, will be examined in terms of the impact in developing viable and productive activities three years after credit disbursements. A gender analysis approach will be utilized. Women-specific projects carry women's component whereas "integrated" projects may be "gender blind" or "gender sensitive"; however, all such approaches will be included in the study.

3. **Institutional Framework**

INSTRAW is an autonomous body within the framework of the United Nations. It was established by the Economic and Social Council (ECOSOC) in conformity with General Assembly Resolution No. 3520(xxx) which was based on the recommendations of the 1975 World Conference of the International Women's Year. INSTRAW is based in Santo Domingo, Dominican Republic, and acts as a catalyst to promote the full participation of women in all aspects of development through research, training and information activities. The current emphasis of research is on gender analysis and impact evaluation to help ensure the integration of women into mainstream development, particularly in developing countries, and to increase the efficiency of development assistance for the long-term benefit of all. The Institute works through existing networks of women's organizations, research institutes and centres and national focal points throughout the world in addition to cooperating with the United Nations bodies, specialized agencies and regional commissions as well as governmental and academic institutions.

4. **Activities**

Three types of development agencies, multilateral, bilateral and private aid agencies, engaged in providing assistance through credit activities will be invited to participate in the comparative analysis of the impact of the provision of credit under different conditions. Approximately 30 organizations, 10 from each category are expected to take part in the study. Two stages of research activities are foreseen:

i) a desk study utilizing materials available in project files of the participating agencies to identify key factors involved in project design and delivery and to develop a typology or profile of credit projects and preliminary measures of impact;

ii) a field study in a country or region of a country to be selected, following the desk study, which will allow an in depth examination of the functioning of different types of credit programmes and the impact on individual and group participants and their communities.

The present proposal relates only to the first stage of the research activity, the elaboration and completion of a comparative desk study which is expected to be completed by winter 1993.

Participating agencies will provide a technical staff member, actively involved in project design and evaluation, to carry out the research activities on behalf of their organization. The cost of the staff member attending two joint working meetings with other participants to discuss the study's formulation and results will be assumed by the participating organization.

A first working meeting of all participating development agencies will discuss the strategy of the study and finalize a working typology of assistance to projects identifying the key factors. This working group will also determine objective indicators of the dimensions to be coded and evolve a coding scheme for these indicators to facilitate systematic data collection.

Each agency participant will bring the project records of a selection of projects relating to financial assistance for microenterprise development for which disbursements were made at least three years prior to December 1992. A pretest of the typology and coding of variables will be done during the design meeting to ensure that the measurement system is workable and explicit to all.

Once the data collection strategy has been decided upon and pretested to yield a common coding system, members of the working group will return to their agencies to go through their files of credit projects for microenterprise development. Information will be coded in a standardized format with extra room for additional factors which may be identified as significant during the desk review. Data will be entered directly into a computerized database via commonly available software (Lotus, dBASE IV) to facilitate comparative analysis.

A second working meeting will be convened subsequent to preliminary data processing and analysis. The study participants will discuss difficulties and findings. It is expected that the examination of case studies in the files will yield a useful publication.

The design of the next stage of field research will be outlined with the intention of identifying factors extrinsic and intrinsic to each project which are likely to lead to differing degrees of success. The field study will allow the examination and documentation of the outcomes of projects in greater depth going beyond the development of microenterprises to touch on the ramifications and impacts in terms of family resources, division of labor, decision making, etc.

The site for the field research will be determined at this time. An area (country or region) will be selected which has a large enough number of cases of the different types of credit assistance projects to allow for comparative quantitative analysis. The field research will be carried out in 1993-94.

This research project will serve as a prototype of collaborative interagency research involving international assistance agencies in identifying a common research question and working together to utilize their own project information and activities to provide data for comparative analysis which will facilitate joint discussions and work towards refining assistance programme/project efficiency and impacts. The research will contribute to the knowledge base about gender issues in development, specifically as related to income generation and microenterprise development and will promote policy dialogue and the exchange of insight with other donors as well as recipients of development assistance.

5. Estimated Cost

Proposed Budget for the 2 year period:

	US$
Project Personnel	
Consultant for Proposal Generation	6,000
Project Coordinator (24 w/m)	100,000
INSTRAW part-time project liaison (8 w/m)	50,000
Graduate student interns at INSTRAW for data processing & analysis(total 6 w/m)	12,000
Clerical and Administrative Support	45,000
Mission Costs (2 working meetings in NY)	
Project Coordinator	6,400
INSTRAW Liaison	4,200
Graduate interns (one each working meeting)	2,200
Communications	6,000
Equipment	
Computer hardware & software for data processing and analysis	20,000
Seminars	
Organizational costs for 2 Working Group meetings in New York for four days each for 30 participants	20,000
Partial subsidies for private aid org.s to attend working meetings & participate in the research	20,000
Reports and publications	
Publication of typology of credit projects and preliminary findings from desk study	3,500
Total	295,300

PROJECT PROFILE

Project Title: **Integrated Development of Women in Sericulture**

Country: India

Sector: Micro-enterprises/Construction

Duration: To be determined

Proposed by: United Nations Development Fund for Women (UNIFEM)[1]

Estimated Cost:
Funds requested from UNIFEM: US$ 82,175
Counterpart Gvt. Funds: US$1,83,140
Contribution from WFP: US$ 38,523
Contribution from UNFPA: US$ 3,482
(US$ 1 = 16.37)[2]

1. Background and Justification

Under the project IND/BO/WOS Increasing Employment Opportunities for Tribal Women, a sub-project, sericulture activities in Udaipur District was carried out over a four-year period to generate additional and direct employment for 300 tribal women from villages in the Jhadol and Girwa blocks of Udaipur District in Rajasthan. The project was approved by UNIFEM in 1983, for a three-year period, at a cost of Rs. 2,924,623. Of this UNIFEM inputs amounted to Rs. 1,379,393 (equivalent to US $ 127,635) with the government contribution totalling Rs. 1,548,800. UNIFEM inputs covered training, mulberry cultivation, silk worm rearing, equipment and a van, compensation for loss of crops and a revolving fund for the immediate payment of cocoons purchased from the cultivator. Government inputs were primarily for infrastructure, such as buildings, salaries, vehicle, etc.

UNIFEM's evaluation in early 1987 revealed that although physical targets had been fulfilled and the objective of generating income for the tribals had been met, the effective utilisation of these economic resources towards development remained to be achieved. It was also observed that the focus on women in the project needed to be strengthened. More effective participation by the women to make the project self-sufficient and self-sustaining was essential. Quantitative development had to be strengthened with qualitative development. The present three-year project has been conceived keeping in view the above observations.

---

[1] Contact: Ms. Rosa Linda Miranda, UNIFEM, Regional Office in Bangkok, UN Building, Rajdamnern Avenue, Bangkok 10200, Thailand. Tel: (66-2) 280-0518; Fax: (66-2) 280-6030.

[2] The project is being implemented; however, equivalent funding would be required for replication elsewhere.

2. Objectives

The overall objective of the project is to empower the tribal women and raise their quality of life in an integrated manner through the development of resources available locally in the project area. This will include both human resource development as well as the intensified use of land and other resources, in accordance with point 12 of the restructured Twenty Point Programme, within the framework of the Seventh Five-Year Plan (April 1985 - March 1990). Among the goals relevant to the project, in the context of point 12 (i.e. Equality for Women) of the Twenty Point Programme, are the following: to raise the status of women; to implement a national programme of training and employment for women; and to enable women to participate with equality in socio-economic development and nation building. The more immediate objectives are:

i) to enhance the income of 300 women through sericulture and vegetable growing;
ii) to facilitate the organisation of an additional 500 women (including the 500 mentioned earlier), around economic activities, into at least 6 women's clubs or Mahila Mandals (MMs);
iii) to further empower these groups by training them in awareness issues related specifically to women in development (WID) with a focus on health and family welfare;
iv) to increase the availability of food to the participants and their families and to improve family food habits.

3. Activities

Activities Related to Immediate Objective 1: To Enhance the Income of 500 Women through Sericulture and Vegetable Growing

Following selection of the participants, the women will be trained in the following:

A. Sericulture (200 new beneficiaries)
B. Vegetable growing (300 women)

A. Sericulture

Material inputs required for the mulberry plantation will amount to Rs. 500 per unit out of which the cultivator will bear Rs. 250 per unit; the remaining 50% cost will be met by UNIFEM. Silk worm rearing equipment will be provided to the women at the rate of Rs. 1,500 per unit. A revolving loan fund of Rs. 90,000 will be provided to the project by UNIFEM to give interest-free loans to participants to buy the material inputs for individual rearing huts. Details of the Revolving Loan fund are provided in Annex C. Training costs, in silkworm rearing, will be negligible as, through IND/80/WO5, some local women have mastered the skill. This potential will now be used to train the new beneficiaries.

B. Vegetable Growing

The 200 women involved in the sericulture component will be encouraged to grow seasonal vegetables rich in nutrition as an intercrop to mulberry. A further 100 women will be selected from the beneficiaries of IND/80/WO5. These will be women who have a good source of irrigation nearby, such as wells which have water for about 9 months in a year. Statistics have shown that some 30% of the beneficiaries of IND/80/WO5 come under this category. They had been able to get two crops a year even in drought conditions.

The system of intercropping will be beneficial to sericulture, in the long run, as it will lead to more effective soil working. At the same time, it will entail an intensified use of land resources. Not only will this provide the participants with an additional source of income through sales in the local markets but the vegetables grown will be a source of supplementary nutrition, especially for women and children.

Activities Related to Immediate Objective 2: To Facilitate the Organization of 500 Women into at least Six Women's Groups Around Economic Activities

At least 6 MMs will be organized in the project area, depending on the geographical location of villages, composed of the 200 new participants and the 300 participants from IND/80/WO5. As the Tribal Area Development (TADD) does not have any female staff, this activity will be entrusted to NGOs. NGOs usually have a good rapport with the village people and the process of group organization will be facilitated. Concrete discussions were held with ASTHA. It was agreed that:

i) Leadership training, including training in banking, would be imparted bi-annually, over 3 years for 7 days each time, to the management committee at the grass roots. This committee will include MM leaders, creche teachers, health workers, ICDS anganwadi teachers, WDP sathins and the TADD field workers.

ii) Training for teachers in creches would be imparted to 12 trainees for 4 days each, once a year, over 3 years.

iii) Twelve health workers would be trained for 4 days every year for 2 years. Medical kits would be given to them.

iv) Training in puppetry would be imparted to women and relevant social issues conveyed through this medium.

v) The TADD staff would get orientation in the "software" aspects of the project.

vi) Resource persons would be hired to visit the women's groups and discuss issues relevant to them.

vii) About 50-100 women would be taken on a study trip, to SEWA Ahmedabad or ASTHA's project area in Kotra etc., to encourage exchange between the groups.

It was observed during the evaluation of ICDS projects that the anganwadis cater primarily to children between 3-6 years. To bridge the gap and help women who join the MMs, a creche for children under 3 years will be set up under the supervision of the MMs. ASTHA has successfully established community based creches that are run efficiently by illiterate mothers. The focus of the creche will be child care, health and sanitation together with a focus on forming school-going habits through utilizing the ICDS pre-school facilities as a bridge to continuing in primary school. In this context, a close link will be established between the MMs, creche and ICDS anganwadis.

One poultry unit will be given to each MM after training 5 or 6 women in poultry rearing and basic veterinary care. These women will be chosen jointly by the executive committee of the MMs. The committee will include the leader of the women's group, the health worker, teacher, WDP sathin, ICDS anganwadi teacher and one member each from the NGO and the TADD. It should be noted that poultry and sericulture activities are complementary to each other, as mulberry leaf waste is good poultry feed and poultry droppings form good manure for mulberry and kitchen gardening. Each poultry unit will consist of 100 birds. Most of the eggs will be used as a diet supplement for the women of the MMs and the children in the creches. Emphasis will be placed on local marketing. At the same time, the MM will earn returns to make the poultry unit self-sustaining. Initially, only 50 birds will be provided. This number will gradually increase to 100 or 150 depending on marketability and consequent viability.

Mushroom growing has been identified as an income earning activity for the following reasons:

i) it is an activity which, like sericulture, can be conducted under controlled conditions of humidity and temperature. Women trained in chawki rarely understand concepts of controlled temperature and humidity;

ii) like sericulture, mushroom growing brings fast returns with a fairly low economic investments. In the case of paddy straw mushroom, for example, an investment of only Rs. 4 for a bottle of spawn and Rs. 3 for paddy straw is required which is easily affordable; in about 15 days, 3 kgs. of mushroom can be obtained which can be sold at about Rs. 25 per kilo;

iii) the expertise for this activity is locally available at the Agricultural University, Udaipur city;

iv) training can be imparted in the field itself within a period of only 10-15 days;

v) mushrooms have a ready market in Udaipur; transportation is easy and inexpensive as the product is light in weight and not voluminous (in the case of surplus).

To augment the resources of MMs, the Forest Department has agreed to provide kisan nurseries of mulberry and bamboo saplings to the MMs. The size of each nursery will depend on the demand for these trees by the villagers. This input in social forestry will provide both tree cover as well as generate additional mulberry and bamboo resources in the areas.

Protection and survival of these species of trees is expected to be good as the people have already been motivated and are well aware of the economic benefits accruing from these species. This will lead to automatic "social fencing". Mulberry will be grown both as a tree yielding fruit and timber as well as food for silkworms. The tree can be harvested after 20 years. It fetches a good income and also coppices again, which is an advantage. Good foliage can be obtained for about four years after planting. It requires less irrigation than stem cuttings as its roots can go deeper in the soil. Mulberry leaves also provide good fodder for cattle. The Forest department pays 40 paise (100 paise = 1 Rs.) for each sapling. Thus, even if a nursery of 40,000 plants is set up, the women will have about Rs. 16,000 additional income to be used for their activities. Part of the returns will be deposited into an account to generate a fund which should amount to Rs. 36,000 over three years, so that the return from it can pay for the honorarium of the health worker, the MM leader and the creche teacher at Rs. 100 each per month.

A community centre will be established for the activities of the MMs. This will be done either on village land or Government wasteland. One such centre will be established for each MM possibly as an extension of the community rearing centre. In many villages, as the anganwadis under the ICDS programme do not have adequate space, these community centres could be used for the anganwadi as well for women's activities, which is an objective of the WFP Supplementary Nutrition project. The community will receive wages and Food-for-Work for the construction activities.

Activities Related to Immediate Objective 3: To Further Empower Groups by Training them in Awareness Issues Related Specifically to WID

The flow of money as a result of income generating activities needs to be channelled into savings to make the economic impact long lasting. The savings habit will be encouraged by opening bank accounts for each participant. Initially, small savings of Rs. 5 to Rs. 10 per month will be started after discussions with the women. The pass books will be kept in order by the leaders of the MM. However, simultaneously, basic training to the women on accounting and management of bank accounts will be imparted, so that each woman can look after her own account in about a year.

The NGO working with the women's groups will be requested to encourage street theater puppetry, drawing talent from among the women and children of the village. Through this medium, awareness of women's issues will be highlighted in a powerful manner. Local folk-lore will be used to spread awareness on issues like save the forest, anti-alcoholism, sanitation, child care and health.

The MMs will gradually become fora where issues relating to WID, such a legal rights, possible avenues for socio-economic development, health, education, accounting, management, etc., are discussed and adapted to local conditions and needs. Resource persons, from NGOs and government agencies, will be invited.

Study trips will be organized for the participants. It is proposed to take about 50 women on a study trip to SEWA (Self-Employed Women's Association) in Ahmedabed, ASTHA in Kotra or the Silk Board in Karnataka. This will expose them to the working of women's groups and cooperatives as well as give them an idea of the scope and extent of mulberry growing and sericulture. At the moment, their horizons are limited to 1/4 acre of land under mulberry cultivation and 50 Disease Free Layings (DFLs) for cocoon rearing. The revolving fund of Rs.90,000 will be transferred to the NGO, once all the individual huts have been built, and used for strengthening social inputs into the project.

Some of the participants will be covered by the ICDS project (pregnant and lactating women, and mothers of children enrolled in the anganwadis); however, to extend health facilities to all the participants, one or two women from each MM will be trained as health workers, under funding by UNFPA. The baseline survey will reveal the main ailments prevalent in the area. Ratondi or night blindness, due to a deficiency of vitamin A, is a common ailment. Special emphasis will be paid to these diseases during the training and efforts will be made to adapt the training to local conditions, to the extent possible. Basic medical kits with relevant medicines will be given to the trainees on successful completion of their training. Following their training, the 12 women will have developed the capacity to provide basic curative health services and carry out some preventive care as well as provide health, nutrition and sanitation education.

At least two group meetings will be held by NGOs, in each of the 12 villages in the project area, to identify local human resources to be further trained as catalysts. Details of training by the NGO have been given earlier.

Activities Related to Immediate Objective 4: To Increase the Food Available to the Participants and their Families and to Improve Family Food Habits

The labour component of the activities proposed will generate 33,300 work days (21,240 work days in the first year and 12,060 work days in the second year), in total:

*	Mulberry cultivation ...	9,000 work days
*	Construction of huts for silkworm rearing ...	18,000 work days
*	Construction of MMs ...	6,300 work days
	Total	33,300 work days

The participants will be involved in Food-for-Work activities and will receive WFP food rations, in accordance with the agreed norms, under the WFP project No. 2773. In all, 66 MT of wheat and 6,660 MT of pulses will be made available to project participants. The WFP fund, generated under the programme in the first two years, will be about Rs. 133,200. This will be deposited in the bank account of WFP project No. 2773. As a supporting activity, 150 wells will be reblasted to strengthen the existing irrigation system. The cost per well will be Rs. 2,000 for 72 holes of blasting. This will make the well go 6 ft. deeper. Digging of the wells after reblasting will be undertaken by the participants' families, as their contribution. The total cost of reblasting, amounting to Rs. 300,000, will be financed from ongoing WFP project No. 2773.

The WFP food will be collected by the project officer, TADD, from the central godown at Udaipur. All handling, transportation, storage and distribution costs will be borne by TADD. The TADD project officer will be required to collect, from participants, the money surrendered by them at Rs. 4 for each day of work, in lieu of a WFP family ration, and deposit it with the Project Director, WFP. TADD will also adhere to reporting requirements as specified in Plan of Operations governing WFP Project No. 2773.

4. Expected Results

In all, 500 women will participate in the project activities; 200 new beneficiaries will be targeted. At the same time, it is envisaged that a grassroots level organisation will be formed comprising of all the participants in the project. These women's groups will be trained and organised to become the focal points of developmental activities in the village. In addition to sericulture, these groups will also plan, implement and monitor supportive health, nutrition and income generating activities for the beneficiaries and their children, encourage school going habits amongst the children, inculcate the habit of savings amongst the participants and generate a joint fund, in cash or kind, to cater to the needs of the group. More specifically, the following are expected to be accomplished:

* 200 more women trained in sericulture;
* 300 women trained in vegetable growing;
* 150 reblasted wells;
* 200 individual silk worm rearing huts;
* 200 mulberry farms of 1/4 acre each;
* At least 6 poultry units of 100 birds each;
* At least 6 mahila mandal community centres;
* At least 6 creches;
* Returns from at least 6 kisan nurseries, a fund of Rs.36,000 with each mahila mandal;
* 50 women exposed to sericulture in Bangalore and women's activities at SEWA in Ahmedabad;
* 200 units of bamboo equipment;
* 24 women trained in mushroom growing or poultry keeping;
* 12 women trained in health care & other women-related issues

5. Estimated Cost

Funds requested from UNIFEM:	Rs. 1,345,200	= US$ 82.175
Counterpart Government Funds:	Rs. 2,998,000	= US$ 1,83.140
Contribution from WFP:	Rs. 630,620	= US$ 38,523
Contribution from UNFPA:	Rs. 57,000	= US$ 3,482

(US$ 1 = 16.37)

PROJECT PROFILE

Project Title:	**Recycling Plastic at Neighbourhood Level: Urban Micro-Industries for Plastic Recycling Waste Management**
Country:	Mexico
Sector:	Micro-enterprises/Construction
Duration:	To be determined
Proposed by:	Grupo de Tecnologia Alternative[1]
Estimated Cost:	To be determined

1. Background and Justification

In this era of plastic, products are increasingly being generated out of plastic materials of different kinds. In Mexico, only 4.7% of the plastic produced every year (1390 millions of tons/year) is recycled. Though plastic is an organic waste, its biodegradation is extremely slow (taking hundreds of years). Its presence in sites is harmful to the earth and it produces, when mixed with rubbish, liquids causing illnesses, such as cancer. Women can play an effective role in recycling of waste plastics by forming micro-industries at neighbourhood level, especially since, transport of waste plastic constitutes around 50% of the cost required to recycle it which often makes the exercise of recycling unsustainable.

2. Objectives

The overall objective is to reduce recycling and pollution costs and promote an avenue of cooperation where women are more effective than other groups. The more immediate objective is:

i) to recycle at neighbourhood levels by transforming plastic products into powder, i.e. reducing volume to be transported to the factories;

ii) to separate plastics from all other waste, so it is clean in order to be powdered and recycled;

---

[1] Contact: Ms. Josefina Mena-Abraham, Grupo de Tecnologia Alternativa S.C., Ave. Lomas Verdes 454-H, Frac. Lomas Verdes, Daucalpande Juare 2, Edo. Mexico, CP 53120. Tel: (905) 393-0933; Fax: (905) 393-0939.

iii) to facilitate carrying out these activities at home and in shops, inside their own neighbourhood.

3. Activities

a) To register the micro-industry, acquire accountant books and to find a suitable site inside the neighbourhood (approximately 70 M2);

b) To acquire an alternative technology machinery to powder plastic, if possible to acquire a machine to compact low-density plastics;

c) To install workshop and machines; to acquire a stock of recuperated plastics (around 9 ton);

d) To undertaken research studies on who produces waste plastics (shops, factories, workshops) in big quantities in the neighbourhoods.

e) To promote separation of plastic in such services and among neighbours; to train 3 workers (women) to use each machine; to train women who will be working in collecting plastics inside the neighbourhood.

f) To research about factories in the micro-region which can buy pellet (powdered plastic);

g) To acquire a credit for US$ 25,500: (i) to invest US$ 9,5000 in machines and equipment; (ii) working money of the first year US$ 16,000; considering that the micro-industry could pay recuperated plastic at US$ 52/ton, and it could sell pellets at US$ 225/ton.

4. Expected Results

Women will be more actively involved in plastics recycling and pollution control through neighbourhood level groups in homes and shops. The cost of recycling would be reduced since plastics would be transformed into powder, thus reducing the volume to be transported to the factories.

5. Estimated Cost

The project will need the following inputs to start the project: administrative/legal, technical, educational and economic (see diagram). It will employ 3 workers/machine processing from 9600 kg/amount the first year, and slowly increase it until the maximum capacity is reached in the 4th year of operation. Final earnings will increase, therefore, from US$ 25,933, in the first year, to US$ 87,896/year in the 4th year[1]. The project will also employ a secretary and an accountant. Further, it provides complementary activities to many women in the neighbourhood. In the seminar, the methodology used by GTS S.C. to calculate the whole income-outcome for particular cases of women attending the seminar will be adopted.

---

[1] The calculations concerning micro-industries for women in Mexico have been arrived at based on actual costs.

PROJECT PROFILE

Project Title:	**Women in the Construction and Building Materials Sector**
Country:	Asia and Pacific Region
Sector:	Micro-enterprises/Construction
Duration:	To be determined
Proposed by:	UN Centre for Human Settlements (HABITAT)[1]
Estimated Cost:	To be determined

1. Background and Justification

Homelessness has come to characterize a quarter of the global population. Over one billion persons are said to be homeless either literally or in the sense of living under extremely inadequate circumstances. Among the homeless, a large percentage are women. Women constitute a slight majority of the global population, a visible majority of the poor and the poorest of the poor. Thus, any effort to improve the living standards of human beings and of the poor should include routine and specific consideration of women as beneficiaries of and contributors to shelter development. Development cannot be achieved if one half of the population lags behind the other half. This has been shown to be true when over-all macro growth was targeted and also when equitable development was aimed at.

Women are major builders of society as well as constructors and maintainers of shelter. In large parts of the world, especially in rural regions and poor urban areas, women contribute a substantial portion of labour required for shelter and infrastructure development. If any improvements in the shelter situation of the urban and rural poor are intended, such improvements cannot be achieved without the continued contributions of women. Should efforts to upgrade human resources exclude women, serious positive changes in the present settlement situation cannot be expected to take place.

---

[1] Contact: Ms. Aliye Celik, HABITAT, One UN Plaza, DC2-950, New York, NY 10017, USA. Tel: (212) 963-4200; Fax: (212) 963-8721.

Women are providers of basic services in the majority of human settlements, especially among the poor. Women's critical role as primary health providers and as contributors to hygiene and to the maintenance and upgrading of shelter environment cannot be challenged. Women also provide a major portion of the energy consumed in settlements and are transporters of rural produce in large parts of the world. Women organize and form groups to provide a large bulk of infrastructure to the communities they live in. Yet, women's participation is hindered in the planning and implementation of community services and infrastructure.

Housing, because of cultural patterns as well as the biological facts of reproduction, everywhere bears a greater significance for women than for men. Women world-wide carry the heavier responsibility for home and family. While that pattern will have to be changed in favour of more equal sharing of familial responsibility, the fact remains that women are the major homemakers and maintainers of the family shelter. There is also empirical verification that women are willing to allocate a greater share of family income to housing than men. Thus, housing is assumed to have greater significance to the lives of women than to those of men.

Because women constitute the majority of the poor and the poorest of the poor, they bear a greater portion of the problems of poverty. Besides, traditionally, with respect to "modern" legal systems, women are systematically discriminated against. Even when de jure discrimination is eliminated, de facto discrimination and stereotyping prevails. Stereotyped images of the role of women in society hinder women's participation as beneficiaries and contributors to shelter development. Thus, women's right of land and home ownership, their security of tenure, their access to services and their "credibility" are limited; their participation in policies, programmes and projects for shelter development is restricted.

In developing countries, women have a role to play in the informal sector because they usually have limited access to jobs due to lack of training in required skills. Besides, generating income, women also take care of children by working in their houses. Generally, women are involved in income-generating activities such as sewing, knitting, cooking or weaving. Their involvement in building materials production is marginal, although in many cases women have been active in the construction of their own houses, for example in the traditional architecture of nomadic societies. In some countries, house finishes, especially, are considered to be the responsibility of women, as in Ghana. Usually, women prepare the ground for construction, weave the mats for the roofs, do the wall finishes and make the floor mats. The decoration of the houses is the responsibility of women. However, often women work actively in actual construction, as in the preparation of mud bricks and carrying various materials.

In many countries, like India, carrying water and building materials on the building site is mainly done by women, as this job needs no skills. In other countries, like Ghana, women are involved in income-generating activities dealing with building materials production. This field offers sustainable opportunities for women, mainly because small-scale production units with the involvement of women would be advantageous for them, both as producers and users of such materials.

The building materials sector should be accorded a high priority in national industrial development, considering that indigenous building materials can lead to self-sufficiency and import substitution if they are adopted on a wide scale. The building materials industry is very important in a developing country because of its linkages with other sectors of the economy, its ability to stimulate industrial growth and its terms of sensitivity to labour-capital substitution. In this connection, the indigenous building materials industry can be strengthened by supporting and promoting the small-scale building materials industries.

Building materials are the most important input to the construction sector. Survey in a number of developing countries show that the intermediate consumption of materials and supplies range from 37% to 55% of the total value of construction output. Thus, the building materials industry constitutes critical prerequisite to the development of construction activities and of development, in general. Experience in developing countries over the last few decades has shown that the lack of adequate development of this sector can lead to considerable delays in the implementation of development projects. Moreover, foreign exchange constraints due to high foreign indebtedness and slack exports impose severe external limitations to the development prospects of a great number of developing countries. In this context, due to its potential for import substitution and its role in development, this sector constitutes a priority target for any national policy aimed at satisfying the needs of the population and decreasing import dependency.

Many developing countries do not have clear policies regarding the ways and means to increase the production of building materials in order to cope with the increasing demands in years to come. A strategy to develop the local production of building materials has to be based on an assessment of the needs and available resources and on the need to master the technology for producing suitable materials. This involves a number of related problems. In the first place, based on an assessment of existing resources, countries will have to choose products for which they have adequate raw materials. This implies the establishment of raw material inventories and undertaking research for the development of products based on those resources.

Once the choice of products has been made and local production is envisaged, the developing countries will have to solve the problems related to the choice of technology, its adaptation to local needs and the training required at all levels to use the technology. An important step in the development of a self-sustaining building materials industry is the mastery of design and production of required capital goods.

The construction sector remains to be one of the areas where women's involvement is marginal. An increase in women's involvement in the activities of the construction sector would help to improve the output of the sector, particularly in the area of housing while increasing women's income. Income generating activities for women tend to be limited to handicrafts, however, there is a great potential in women's involvement in both the construction sector and building materials production sector.

2. Objectives

The long-term objectives are to improve the socio-economic situation of women in Asia and the Pacific and promote their full participation in generating income in the building materials production sector; and to improve the small scale production of building materials by using appropriate indigenous technologies with a support system including, as appropriate, revolving loan funds, training, assistance in various aspects of marketing and commercialization of the best techniques by individual and group enterprises at the community level. The more immediate objectives (to be achieved within UNIFEM's over-all policies and programmes, in close co-operation with UNDP and in consultation with UNCHS <Habitat>, national governments, private technology firms, NGOs, non-profit groups and building research institutes) reflecting the service oriented nature of project are:

i) to identify, formulate, monitor and evaluate field projects in Asia and the Pacific by which appropriate building materials production are provided to poor rural and urban women;

ii) to stimulate and assist governments through related ministries, departments, divisions and units, UN agencies, NGOs and others to prepare and execute field projects;

iii) to develop and disseminate technical information on selected building material production;

iv) to increase the impact of appropriate building materials production and women-related programmes and to avoid duplication of efforts and resources by collaborating with donors and/or implementing agencies, national, international and government of NGOs;

v) to contribute to the efficient execution of field projects in Asia and the Pacific the facility of pre-project training when required in relevant subjects and skills thus enhancing the competence of selected field project staff and/or beneficiary women;

vi) the preparation and analysis of progress and evaluation of reports and provision of feedback.

3. Institutional Framework

The project will be a joint effort of UNIFEM and UNCHS with the Headquarters of the project being maintained at UNIFEM, New York.

4. Activities

This project document deals with production of building materials and has a number of important factors. It should be in line with the formation of a policy for the development of locally produced construction materials and components in order to reduce the dependence of imported construction materials and identify construction designs and technologies compatible with the availability of local construction materials and labour.

To encourage the development and use of local materials, national sources of raw materials as well as existing codes, regulations, standards and contracting methods should be surveyed and assessed. This will help identify potential constraints upon acceptance and use of indigenous materials. Technical research and development programmes to evaluate, test and upgrade indigenous materials and products should also be carried out or sponsored.

The formulation of a policy for the development of local materials should be viewed as a stage in the development of an over-all policy for appropriate designs, consistent with other objectives for the construction sector, such as increased output and employment of women, the full use of available plant and equipment, research to develop or improve suitable technologies, training of women in the skills needed and the optimal usage of the capacities of the informal sector. This can be pursued by adopting comprehensive policies for the development and use of local building materials whereby developing countries can promote an efficient and adaptable construction sector. The most important components of this project are:

i) providing training to the potential and existing building materials producers, both men and women, for traditional and small-scale production of building materials;

ii) facilitating the flow of credit and capital to producers of building materials especially for women who are new investors, seeking to commercialize innovations; and

iii) setting up a building materials production unit that produces affordable appropriate building materials where men and women work together and share the responsibility.

The project will assess demands from different Asian and Pacific countries for project design missions, preparing proposals of terms of reference and timing for consultants.

Further, it will assess the building materials situation in a particular country and setting a building material production unit according to the specific needs of that country in a specific region, as suggested by the women's machinery. An experimental production unit will be set up where both men and women have equal shares. The unit will be owned by men and women equally and both will have entrepreneurial roles as well as operate as workers. Small-scale brick roof tiles, cement blocks production units can be appropriate but the type of production unit have to be determined by the fact-finding mission.

Output-Activity List

Outputs	**Activities**
(a) Building materials production project for women in Asia	(a) Assess demand in different Asian countries for pre-programming or project design missions, terms of reference of consultants, selection, mission, reporting, project document preparation
(b) Securing of funds	(b)Submission for adoption
(c) Provision of credit/	(c)UNIFEM credit support revolving loans/funds system
(d)Trained entrepreneurs and building materials producers	(d)Identify training needs according to the project and provide suitable training opportunities
(e)Project staff members (national and international) trained in management of field projects and in production of building materials	(e)Training activities for field project staff

(f) Selection of partner institution for training	(f) Identification and selection of institutions with the capacity of training and project management
(g) Selection of partner institution for project implementation	(g) Identify and select institution in Asia with the capacity to engage in project design, execution, monitoring and evaluation, adaptation of building materials production for women.

Inputs

Because of the service-oriented nature of the project, its major input is personnel. They will be carefully selected to maintain high standards of quality, quantity and timely delivery of services. This input is required for:

i) the co-ordination,planning, orientation and administration of the project activities;
ii) selection and preparation of case studies; and
iii) the project design, monitoring and evaluation of personnel.

A major input is training opportunities for consultants, project staff, Asian women from communities or groups where production of building materials is being considered.

The project work plan will comprise of the following main activities:

i) Field missions: A work plan on field missions can be elaborated.
ii) Training: Women and men will be trained in the production of building materials.

Development support communication is an important part of the strategy of the project. As noted in the outputs and activities section, material will be developed, tested, translated and made available to project facilitator. The project will use field visits, demonstrations and extension work to make women aware of the activities and results of different projects. It will use women's organization leaders and mass media communication where advisable and available, to transmit new ideas related to production.

Significant research, results of case-studies and evaluations of projects will be communicated through UNIFEM's Development Review and other relevant publications that will be distributed to actual and potential users of viable technologies. They will also be stored in retrievable form in the UNIFEM's Knowledge Bank. The project will be monitored and evaluated in accordance with the policies and procedures of UNIFEM and UNCHS.

5. Estimated Cost

Pending assessment of the effectiveness of the project after two operational years, decisions will be made concerning further financial inputs to be obtained from UNIFEM and/or other donors. It is foreseen that additional funding may be necessary for activities in Asia as well as for the project to extend its services to other developing regions.

PROJECT PROFILE

Project Title:	**Assistance to Rural Women Engaged in the Production of Low-Cost Building Materials**
Country:	Global
Sector:	Micro-Enterprises/Construction
Duration:	To be determined
Proposed by:	United Nations Industrial and Development Organization (UNIDO)[1]
Estimated Cost:	To be determined

1. Background and Justification

The importance of promoting the critical role of the informal sector and the small-scale production of ecologically sustainable building materials, which accommodate a large proportion of women's work, remains inadequately emphasized. As a result, women's effective participation in the shelter sector, both as beneficiaries and as contributors, is limited.

The choice of building materials is important for women, both as potential employees of the construction sector as well as users and producers of shelter and infrastructure. The use of imported building materials, produced with capital-intensive high technology, reduces employment in the national construction industry. It also hinders the ability of the poor, the majority of whom are women, to obtain affordable and adequate shelter.

There is an enormous range of small-scale production units in developing countries, producing various environmentally sound building materials. For example in the Philippines, cottage industries produce bamboo, bricks and roofing materials on a substantial scale. In Indonesia, small-scale building material industries, in both urban and rural areas, produce clay bricks, tiles, cement products, lime, bamboo, timber elements, etc.

---

[1] Contact: Ms. Babette Klais, Women's Unit, UNIDO, P.O.Box 300, Vienna International Centre, A-1400 Vienna, Austria. Tel: (43-1) 211-31-3719; Fax: (43-1) 232-156.

In many cases women play a major role in this production process, such as entrepreneurs. Production in small units creates local employment. Negative factors, such as chemical wastes often produced by large factories, can be minimized. Employment generating production is usually located near the market where transportation costs are minimal.

In the designing of such projects, UNIDO is mainly concerned with the use of energy-saving, environmentally sound technology, adapted to the socio-cultural conditions of rural women. Part of UNIDO's mandate is to integrate women into industrial development by developing environmentally sound, technical assistance projects, specifically targeting women.

There is a need for adapting indigenous, low-cost building materials, for they use minimal amounts of capital and foreign exchange. The utilization of locally available raw materials and skills in small-scale operations can also be promoted in this manner. Items such as bricks, timber, bamboo or mud are cheaper in terms of affordability for a low-income population. Using proper design and treatment, these homes can last a long time, creating significant savings in building and maintenance costs.

Informal-sector building materials production is labor-intensive. For instance, in brick making, the labor requirements for the production of 10 million bricks a year ranges from 160 employees in small-scale units to only 8 in a modern automated factory. Although wages are low, there are added social benefits; for instance, technical skills are generated which may be used by women to build their own housing. Therefore, the views and needs of women should be considered in the choice of building materials and technologies involved in their production and use.

2. Objectives

The long-term objective of the project is to enhance women's participation in low cost building materials production. More specifically, the project aims:

i) to assess the potential role of women in the production of low cost building materials as well as the socio-cultural role women play in society;

ii) to identify locally available raw materials and determine the production technology to be used;

iii) to carry out a planning workshop to jointly design a project involving all parties concerned, such as women who produce construction building materials, local non-governmental organizations, the government and UNIDO to jointly design a project;

iv) to draft a project proposal to set up a pilot production unit;

v) to implement the project (set up a pilot production unit and training schemes to train women in technological and entrepreneurial skills).

3. **Activities**

The project will undertaken an analysis of the present situation of women in the production of building materials, with a particular focus on the skills required and the technologies used. Locally available raw materials will be identified and analyzed.

Training will be provided to women in production technologies and entrepreneurial skills. They will also be assisted in acquiring environmentally sound shelters, through self-help construction.

Existing environmentally sound technology will be upgraded. Innovate solutions will be identified to cope with the lack of spare parts in instances where foreign machines are necessary.

4. **Expected Results**

The project will assess the potential role of women, in their socio-cultural context, in the production of low cost building materials. It will identify locally available raw material and determine the production technology to be used.

The project will be designed jointly by parties involved as a result of the planning workshop. A project proposal will be drafted on setting up a pilot production unit to train women in technological and entrepreneurial skills.

PROJECT PROFILE

Project Title:	**Environmental Protection of Roads and Water Transportation**
Country:	People's Republic of China
Sector:	Micro-Enterprises/Construction
Duration:	To be determined
Proposed by:	Liu Hong, Engineer, Institute of Scientific Technical Information, Ministry of Communication[1]
Estimated Cost:	To be determined

1. Background and Justification

Highway construction is a well developed sector in the country; however, pollution (such as dust, poisonous gases, exhaust gases, traffic noise, etc) are extremely harmful to both the people and the environment, especially for women and children. A highly vulnerable group are the women engaged in asphalt-mixing sites and on the highways.

In December 1991, five women builders successfully completed construction of the first highway noise-protective screen, which has efficiently prevented noise pollution in the environment. One of the main obstacles identified by women researchers is the lack of technology, experience and knowledge involved in traffic pollution protection. However, as the country is presently launching activities in road environment protection, there is significant demand for further research and training in this area.

---

[1] Contact: Ms. Liu Hong, Engineer, Institute of Scientific Technical Information, Ministry of Communications, #240 Hui Xin Li, Chao Yan District, Bejing 100029, People's Republic of China.

2. Objectives

The long-term objective of the project is to conduct training seminars for women researchers on environmental protection of road and water transportation. More specifically, the objectives are:

i) to emphasize evaluation of the technology in relation to highway environment;

ii) to design and construct technology of highway noise-protective screen;

iii) to designing and constructing technology of low-noise pavement;

iv) to design a methodology of preventing water and soil erosion and protesting the ecological environment in highway construction.

3. Activities

Training will be offered to cadres of highly qualified women researchers and trainers in environmental protection of road and water transportation, taking into account available resources and national needs.

4. Expected Results

Training seminars will be conducted for women researchers on environmental protection of road and water transportation. The highway environmental technology will be evaluated. In addition, the technology in highway noise protective screen, low-noise pavement, methodology of preventing water and soil erosion, and protesting the ecological environment will be designed and constructed.

IX. HEALTH

PROJECT PROFILE

Project Title: **Teaching Package on Gender and Environmental Health**

Country: Global

Sector: Health

Duration: To be determined

Proposed by: World Health Organisation (WHO)[1]

Estimated Cost: To be determined

1. Background and Justification

The Global Networks project consists of several networks of academic and public health personnel in key environmental health areas. Global Environmental Epidemiology Network (GEENET), the first network to be developed, comprises of 1,700 members from both developed and developing countries. The majority of members are involved in teaching future professionals who will ultimately occupy leading positions in environmental health in their countries. Teaching packages are prepared on specific topics for members own use and for use in national training workshops.

2. Objectives

To teach future professionals who will ultimately occupy leading positions in environmental health in their countries.

3. Activities

Under the aegis of GEENET, a project has been started involving the development of a teaching package on Gender Issues in Environmental Health. On its completion, the package will be tested and promoted with the participation of Network members in developing countries, to facilitate its integration into existing teaching curricula. The package will comprise of four separate documents:

---

[1] Contact: Mr. R.J. Anderson, Chief, Office of External Co-ordination, WHO, CH-1211, Geneva 27, Switzerland. Tel: (41-22) 7912171; Fax: (41-22) 7910796.

i) an anthology of brief examples of environmental health problems where gender issues are of significance. These will cover physical, chemical, biological and other environmental hazards as well as the gender roles which may expose women to particular hazards. Each issue will comprise of approximately 2 pages of text, supported, where possible, with statistical evidence;

ii) a series of five detailed case studies concerning gender issues in environmental health;

iii) a tutor's guide for a teaching component of approximately 5 hours within an existing course on environmental health issues (might also be used for a one-day workshop on gender and environmental health issues). The guide will include a proposed time-table, practical guidance and specific information for the teacher. The guide will be distributed to all Network members and other key teaching personnel;

iv) a series of problem-solving exercises for group discussion based on the case studies.

These materials will be sent for review to selected network members and will be tested by them in local teaching activities in several countries.

4. Expected Results

Future professionals, who will ultimately occupy leading positions in environmental health in their countries, would have been sensitized and trained on the subject of gender and environmental health.

The training package designed would have been tested and promoted, with the participation of Network members, in developing countries, to facilitate its integration into existing teaching curricula.

The materials would have been sent for review to selected network members and tested by them in local teaching activities in several countries.

PROJECT PROFILE

Project Title:	**Health and Household Energy**
Country:	Global
Sector:	Health
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	To be determined

1. Background and Justification

Access to energy is a health determinant as this is a key factor in obtaining and maintaining good health. More than half the world's population is dependent on biomass fuel as the sole source of energy for cooking, space heating and lighting. When incompletely combusted in traditional stoves and unventilated housing, biomass and coal can generate extremely high emissions of harmful particulates and gases. It has been estimated that at least 700 million people are exposed to such risks. Women and female children are at greatest risk as it is they who are normally responsible for the provision of fuel and cooking of food. Infants are also exposed to the risk of acute respiratory infections from inhalation of biomass emissions. A table showing the adverse effects of biomass use on human health is attached.

The project is a follow-up to and outcome of the WHO Consultation on Epidemiological, Social and Technical Aspects of Indoor Air Pollution from Biomass Fuel held in Geneva in 1991, under the auspices of the project "Global Networks to Strengthen Education, Training and Research on Environmental Health Hazards." This project is sponsored by the Swedish International Development Authority (SIDA) and the Swedish Agency for Research Cooperation with Developing Countries (SAREC). It will implement some key recommendations from this consultation in selected countries, using a multisectoral approach which is intended to empower local organizations, particularly women's organizations, to extend and improve efforts to reduce the health effects of biomass fuel use.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

The objective of this project is to improve the health of communities, particularly women and children, in countries where the poorer sectors in both rural and urban areas are dependent on biomass fuel. The purpose is to reduce exposure to biomass emissions through the introduction of small-scale alternative technologies. The project focuses on developing and implementing, in collaboration with local governmental and non-governmental organizations (NGOs), models for culturally appropriate technical, behavioural and educational interventions.

3. Activities

For each national project the following activities will be carried out:

i) conduct a feasibility study and intersectoral workshop to assess existing resources and activities, and to formulate a new integrated strategy;

ii) determine the extent to which biomass is a health hazard in the country concerned, and utilize principles of participatory research to identify the most appropriate interventions to ameliorate the problems;

iii) promote the development of local human resources in designing, testing and implementing appropriate interventions, including educational interventions;

iv) monitoring and evaluation of impact of interventions.

Work is initially being undertaken in Ethiopia and Vietnam. When further funding is available, the project will be expanded to other countries.

4. Expected Results

In the long term, the health of communities, particularly women and children from low income levels that depend on biomass fuel, in both rural and urban areas, will improve. Exposure to biomass emissions will be reduced by the introduction of small-scale alternative technologies. The project focuses on developing and implementing, in collaboration with local governments and NGOs, models for culturally appropriate technical, behavioural and educational interventions.

In each national project, feasibility studies and intersectoral workshops will be conducted to assess existing resources and activities, and to formulate a new integrated strategies.

The extent to which biomass affects the health will be determined and, using the principles of participatory research, the most appropriate interventions to ameliorate the problems will be identified.

Local human resources will be developed to design, test and implement appropriate interventions, including educational interventions.

Table on Adverse of Biomass on Human Health

The adverse effects on human health of biomass production, collection and combustion include, at minimum, the following:

	FUNCTION	**POSSIBLE HEALTH EFFECTS**
i)	Processing/preparing cakes	Fecal/oral/enteric infection skin infection
	Charcoal production	CO poisoning, Cataract
ii)	Gathering fuel wood, etc.	Bites, stings from venomous snakes, spiders, insects; Allergic reactions; Fungus infections; Fatigue; Reduced infant/child care; Trauma
iii)	Effects of smoke acute	Conjunctivitis; upper respiratory irritation/inflammation; Acute Respiratory Infection (ARI)
	Effects of toxic gases	Acute poisoning, eg. CO
	Effects of smoke	Bronchitis, bronchiolitis, subacute, Blepharo conjunctivitis
	Effects of smoke	Chronic Obstructive Pulmonary Disease (COPD), Corpulmonale, Poor reproductive outcomes, Cancer (Ca lung, NPC)
	Effects of heat	acute burns, chronic Cataract
	Ergonomis effects of crouching over stove	Arthritis

PROJECT PROFILE

Project Title:	**Women and Health**
Country:	Global
Sector:	Health
Duration:	To be determined
Proposed by:	World Health Organisation (WHO)[1]
Estimated Cost:	To be determined

1. Background and Justification

Health and development are closely interconnected. The most immediate problems in the world are ill-health and premature death caused by biological agents in the human environment, such as water, food, air and soil. They contribute to ill-health and disabilities of a number of people. The problem is most acute in those developing countries where four million infants and/or children die every year from diarrhoeal disease, largely as a result of contaminated food and/or water; two million people die from malaria each year and hundreds of millions suffer from parasitic infestations.

Serious environmental health problems are shared by both developed and developing countries affecting hundreds of millions of people who suffer from respiratory and other diseases caused by biological and chemical agents, including tobacco smoke in the air, both indoors and outdoors; hundreds of millions who are exposed to unnecessary chemical and physical hazards in their homes and workplaces on wider scale (WHO/EHE/1992). Health also depends on whether people can obtain food, water and shelter. Over 1000 million people lack the income or land to meat such basic needs. Population growth, the way resources are exploited and waste is generated, threatens the environmental base on which health and survival depend. Two concerns are vital: development addressing people's needs, especially for health, and ecological sustainability, so that natural resources are not depleted.

---

[1] Contact: Mr. R.J. Anderson, Chief, Office of External Co-ordination, WHO, CH-1211, Geneva 27, Switzerland. Tel: (41-22) 7912171; Fax: (41-22) 7910796.

Women are central to all aspects of human health. In rural and peri-urban areas, women are responsible for ensuring that their family's health is not threatened by contaminated and unsanitary surroundings. Security, safe drinking water, preparing and storing foods in a hygienic manner, removing organic and inorganic waste and educating children on the importance of sanitation and hygiene are all responsibilities undertaken at home, either directly or supervised by women.

2. Objectives

Within the overall strategy to achieve health for all by the year 2000, the objective is to integrate women's needs and their experiences in solutions to health problems within the existing institutional framework at the national and local levels. The more immediate objectives are:

i) to develop awareness in all individuals and organizations, including all sectors and levels of government, community organizations and businesses on women's roles and responsibilities for health and the environment;

ii) to define tools and methods to strengthen primary health care systems that are community-based, socially acceptable and that meet basic health care needs in an integrated manner.

3. Activities

Collection of base line-data, including environmental health, indicators, to provide an adequate framework of women's needs and capabilities in order to ensure realistic planning;

Development of strategies for a two-way communication of information transmission and feedback from the community to the national level in order to take account of women's participation and their involvement in primary environmental care. They should also encompass promotion of health education in schools, information exchange, technical support and capacity building;

Initiating in accordance with national plans, guidelines for women's involvement in environmental health activities, including optimization of the appropriate use of community, financial and human resources within new industrial, commercial, agricultural and infrastructural development.

4. Expected Results

Women's needs and experiences will be integrated to evolve solutions to health problems within the overall strategy to achieve Health for All by the Year 2000.

Awareness on the subject of women's roles and responsibilities for health and the environment will be enhanced in all individuals and organizations, including all sectors and levels of government, community organizations and businesses.

Primary health care systems that are community-based, socially acceptable and that meet basic health care will be strengthened by appropriate tools and methods.

PROJECT PROFILE

Project Title: **Educational, Nutritional and Health Programmes for Children Involved in Waste Collection, and Awareness Programme for Women Involved in Rag-Picking**

Country: India - Calcutta, Tilijala Bustee, slum area nearby the railway station of Park Circus Railway

Sector: Health

Duration: 12 months

Proposed by: AIDOS/United Bustee Development Association (UBDA), Calcutta[1]

Estimated Cost: US$ 34,000

1. Background and Justification

Ubda is located and operates in one of the many slum areas of Calcutta, a town where hundreds of thousands of people are homeless and millions live in slums. Efforts made by the town council are not sufficient to improve the living conditions of the population. The situation is further deteriorated by the massive influx of refugees from Bangladesh, especially as a consequence of floods. Some of the slums are "authorized", thus served by water, electricity and sanitation system, while "non-authorized" ones are not included in official interventions. The slum where the project will be implemented is inhabited by 30,000 people who suffer from lack of adequate infrastructure and services. The slum includes also a non-authorized area on the railway ground. Health and hygiene are very poor and socio-economic conditions are extremely hard.

One of the characteristics of Ubda is the work carried out in by a large concentration of women and children in solid waste collection (scrap-iron, plastic, rags, paper, glass, etc). There are about 700 women rag-pickers and 300 children in waste collection.

---

[1] Contact: Ms. Daniela Colombo, President, Italian Association for Women in Development (AIDOS), Via de Giubbonari 30, 00186 Rome, Italy. Tel: (39-6) 68-73-214; Fax: (39-6) 68-72-549.

The organization of the activity of waste collection and management is essential not only for the environmental aspects related to it but also as a source of income for the benefit of women. It would enable the women to overcome the problem of intermediaries who are now in control of the activity. They have transport and contacts with the buyers, thus, can keep the price of waste collected by the women"rag-pickers" very low. Furthermore, the health and hygiene conditions of the women"rag-pickers" and their children are very poor. This requires the introduction and dissemination of appropriate tools and basic health practices.

2. **Objectives**

The overall objective is to improve the working conditions of women and child rag-pickers. In the medium and longer terms as a result of the study on the sector, the objective is to generate additional income for the households through the activity of waste management, leading to the reduction and possibly elimination of the condition of child-workers. The more specific objectives are:

- to organize the women rag-pickers who are involved in waste collection, so the environmental aspects are better managed and they provide a more sustained income for the women;
- to invest in human resources by use of two local researchers to carry out a feasibility study of the sector aiming at promoting "informal unionism", eliminating intermediaries through entrepreneurship development among women and preparing a second phase to transform or recycle waste material.
- to increase awareness among women rag-pickers on the health risks they may incur and make an attempt to prevent major diseases in view of a future improvement of the activity;
- to improve the health and hygiene conditions in the local households of the women "rag-pickers" and their children by introducing and disseminating information on basic health practices;
- to introduce an informal education and literacy programme for children, forced to work, during the afternoon hours as otherwise would not have access to any education because of the need to contribute to the family income;
- to guarantee a daily meal to children and contribute to the improvement of their diet through the use of local food;

- to offer health assistance to women and children;
- to support production activities in the slum area through local purchase of all equipment and material necessary to the project, such as food sold on the local market, school uniforms made by cooperative groups, and so on;
- to finalise a study on working and marketing situation in the field of sorted waste collection, with the objective of organising an informal union and setting up marketing channels, so as to avoid the use of intermediaries;

3. Institutional Capacity

The project will be built around existing institutional capacity such as premises for school; open space for canteen; and room space for health clinic and consultations.

4. Activities

The project includes the following activities:

- a social and health programme for women rag-pickers;
- a literacy programme for children working in the sector of "sorted collection";
- a nutritional programme for the same children;
- a health assistance guarantee;
- the finalisation of a study on working and marketing situation in the field of sorted waste collection, with the aim of organising an informal union and setting up marketing channels as to avoid the use of intermediaries.

Social and Health Education of Rag-Pickers

A woman extension officer will be responsible for the dissemination of information on (i) basic hygiene in a working environment where women are exposed to dangerous materials and water is scarce; and (ii) home economics. To raise awareness among women in such areas requires the female extension officer to work closely with women, prepare posters and other training material.

Informal Literacy Programme for 200 Children

Ubda stresses the need to abolish children's work by means of providing them with the necessary skills to enter other sectors of the economy. Therefore, courses will be held for children (9-12 years) in the afternoon, after working hours.

Nutritional Programme for the Children

Malnutrition is one of the major problems especially in female-headed households where women's earning capacity is restricted and the time that can be spent in the preparation of meals is very limited. Therefore, the quality of food is very poor. In order to attract children to school, it is necessary to provide them with food. Besides, a more balanced diet will allow a better performance in learning activities. Therefore, one daily meal will be provided to the scholars at a very small cost (about ItL 100 per meal). Food will be purchased in the local market, so that the money will remain within the system.

Health Assistance

This includes the salary of a part-time physician for timely check-up and basic medicines. Per capita cost for one year would be ItL 15,000.

Finalisation of a Study on the Working Conditions and Market Potential in the Sector of Sorted Waste Collection

The aim is identify and promote an improved organisation of the women rag-pickers on the basis of the experience of the Self Employed Women's Association (SEWA) in Ahmedabad and Working Women's Forum (WWF) in Madras, which should be visited by two local researchers.

All equipment and material will be purchased on the local market, except medicines to be purchased in Calcutta. Purchases would include: (i) eggs, bananas, rice, flour, lentils, and oil; (ii) school uniforms , pencils, and exercise-books; and (iii) medicines for dispensary.

The project activities will be undertaken over a duration of twelve months.

5. Expected Results

The project beneficiaries will comprise of about 200 children who will benefit from the educational, nutritional and health programmes and a few hundred women rag-pickers who will benefit from the implementation of project activities in the areas of health and hygiene in the work place. The major findings of the feasibility study on "sorted waste collection" will be completed within six months after the selection and appointment of researchers. The amelioration and increased profitability in the sector will also provide further insights on improving their situation.

This project will have an impact on the level of education as well as on the health conditions of the community involved. The economic impact is related to the small savings made by families concerned in relation to food, school equipment and medicines which will be provided by the project. Furthermore, the project will contribute to a global effort for the improvement of living and working conditions in the slum area requiring the direct involvement of inhabitants and Ubda. Such an attempt of self-management is not oriented towards the replacement of the public structure and administration. It would rather show the real concern of the population and their willingness to participate in any activity to improve the present situation.

X. SMALL-SCALE MINING

PROJECT PROFILE

Project Title:	**Mobile Mining Task Force**
Country:	Selected Countries in Latin America, Africa or Asia
Sector:	Small-Scale Mining
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 410,000

1. Background and Justification

Once economic mineral prospects are identified and preliminary evaluations conducted, direct investment promotion is be carried out. This implies direct contact with possible investors and making available to them sample material, chemical analysis and other physical testing results to permit them to have an early idea of the potential of deposits.

This is even more important in the promotion of non-metallic or industrial minerals which have high purity or chemical qualities and require cheap transportation costs. Investors not only want to have an idea of the quality but the immediate availability of material. In the case of construction materials such as marbles, granites and other material these have a high degree of subjectivity and, therefore, a variety of material must be made available.

A fully equipped mobile mining unit (with necessary key equipment) was set up in a UNDESD project, to open quarry sites, train national staff to operate equipment and apply appropriate techniques for different mining conditions. Efforts were made towards minimizing degradation from quarrying activities by providing environmental impact guidelines.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

The project will focus on assessing the technical viability and commercial marketability of mineral resources, especially non-metallic minerals and attempt to tie down investors interest.

3. Activities

The scheme calls for an established government Geologic Survey or a Mining Department to provide the full support of its expertise, staff, laboratory and other facilities. Activities will comprise of the following:

i) Acquisition of mobile mining equipment;
ii) Training of national staff in the use and operation of the equipment;
iii) Opening of quarry rock-faces to provide material and show the availability of resources to investors;
iv) Evaluation of the material through studies, chemical analysis and physical tests; submission of results to interested local investors;
v) Provision of mining services to local investors and industrialist to obtain material for international promotion;
vi) Advisement on environmental and mining regulations for quarrying operations.

4. Expected Results

Seven marble rock-faces in different marble deposits are to be opened. Technical evaluation reports are to be prepared for the respective sites. These reports are used by local investors to obtain or negotiate international financing, development agreements or joint ventures. Consultancies are provided to assess the technical conditions and constraints associated with marble quarrying; assess the impact of industrial mineral extraction on the environment and to make recommendations for national guidelines on environment. A review of national legislation and regulations pertinent to mining has been done.

In conclusion, the mobile mining team or task force has proved to be an effective method for providing rapid practical hands-on assistance to open marble sites to development. Local and international potential investors are to be involved through cost-sharing of the mobile team operating expenses.

5. **Estimated Cost**

Equipment: Air track drill (crawler type; air compressor; used heavy-duty flatbed truck; quarry line drill, hoister for loading heavy, blocks, etc.

Consultancies: quarrying, transportation analysis, mining and environmental regulations.

	US$
Equipment:	350,000
Consultancies:	60,000
Total Cost:	410,000

PROJECT PROFILE

Project Title:	**Development of Small-Scale Mining**
Country:	A Selected Country in Latin America, Africa or Asia
Sector:	Small-Scale Mining
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 560,000

1. Background and Justification

Most small-scale mines are operated by cooperatives or family groups. They generally extract and concentrate ores manually, without adequate technical direction or proper mine preparation, and sell the concentrate to private traders, medium scale mining operators or to a State Bank. Many small miners are not productive but hold on to their claims by paying an annual mineral patent fee. As a result, a significant amount of highly prospective ground lies in the hands of small miners who do not have the ability to explore or exploit their ground adequately. Many of these mines can be exploited as medium scale mining operations, thus raising the overall national capability to generate foreign exchange through exports, import substitutions or manufacturing in the country.

A highly successful example is the Shamva Mining Centre in Zimbabwe, run by the Small Scale Miners Association, where appropriate technology, especially for ore processing, is developed and taught for the benefit of small scale miners in addition to making available necessary equipment facilities.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

The overall objective is to exercise the rational exploitation and use of mineral resources of the country to benefit its economic recovery, generate foreign exchange and provide a source of employment. The immediate objectives are:

i) to upgrade the mining, processing and recovery methods, through technical assistance, so as to raise the productivity of new and existing mines;

ii) to obtain credits from institutions and promote new investment in existing mines and new prospects by preparing project profiles and studies to attract local and international investment;

iii) to provide administrative and social assistance by acting as a focal point to contact local and international aid agencies.

3. Activities

A technical team will be formed consisting of a geologist, mining engineer, metallurgist and administration/cost control advisor that will be located in major mining districts to assist the small operators. The proposal calls for an inventory of mines in the districts to assess the needs, set priorities and begin assistance to mines that are in a position to start or increase production immediately. On site recommendations are to be given to operators and requirements for improved operations are to be identified. These requirements include equipment, guidelines for ore reserves evaluations and more efficient operating and processing methods. The activities will comprise of the following:

- Prepare an inventory of economic mines and prospects and select a group of mines to assist;
- Evaluation of the mines by a technical group consisting of a geologist, mining engineer and a metallurgist to determine the technical assistance required. Prepare a study to allow the miner to know his geologic potential and quality of his mineral; the state-of-art mining, processing and recovery methods to exploit his mine; define the type of services and infrastructure required (water, energy, roads, etc.) to exploit the mine and give him continued advisement and follow-up according to the recommendations made;
- Prepare studies of at least ten mines or prospects with the best possibilities for expansion to present to institutions or promote to private investors;

* Provide administrative and social assistance to small miners and their family groups by identifying their needs and coordinating assistance from national and international aid agencies.

* Teach administration techniques to miners, especially the women of the family groups, to administrate the activities leaving the men free for the exploitation and mining, which is a current activity in countries such as Bolivia.

4. **Expected Results**

Better understanding of the orebody, safer working environment, environmental considerations and improved administration methods will be promoted. Women will be given a major role in the two latter areas to further their role as administrators of the family groups. Their awareness of environment and health will be improved. Social assistance will be given to family groups by identifying their needs and contacting or coordinating to obtain help from Government or through or in conjunction with international aid agencies.

5. **Estimated Cost**

		US$
*	Personnel cost: Short term international consultant, long term national consultants (geologist, mining engineers, metallurgist), short term national administration expert, a social worker and provision for a short consultancy for any other field identified during the project	360,000
*	Subcontract for chemical analysis and metallurgical tests cross checks	50,000
*	Equipment: two vehicles, small mining equipment, field equipment, etc.	100,000
*	Operation, maintenance, reports, miscellaneous costs	50,000
	TOTAL	560,000

Since a machinery pool would be needed, for the miners to rent, lease, or buy mining equipment, participation from other agencies or international banks is to be sought. This third party contribution is estimated at US$ 570,000 to US$ 700,000.

PROJECT PROFILE

Project Title:	**Assistance to Small-Scale Mining Cooperatives**
Country:	A Country in Central America or Africa
Sector:	Small-Scale Mining
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 518,000

1. Background and Justification

In artisanal mining, world over, there are loosely organized groups of people including family groups, old people, women and independent miners, associated in cooperatives, with the purpose of mining and recovering gold from river courses. Their working, health and social conditions are precarious. In addition, the environment is also affected by unorganized exploitation.

For example in Costa Rica, in Peninsula Osa, gold mining cooperatives working river courses recover only 20-30% of the gold. The accessible gold is being mined out and mining activities are on the verge of entering the adjacent Corcovado National Park, an area declared as an ecological preserve by the Government, to mine areas known to contain accessible gold.

Generally, these cooperatives are wary or untrustful of government technical personnel. They do not believe that the efforts in providing technical assistance are in their benefit. They do rely or trust members of their groups, especially women, to guide or explain these measures.

This situation has led to recognizing the need to train selected women in mining methods and administration techniques to guide the cooperatives and assist the technical personnel.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

2. Objectives

i) Through technical assistance, to raise the productivity of mining cooperatives, thus, increasing their income;

ii) Train women in mining methods and techniques, to act as guides for their groups and assist government personnel in providing technical assistance;

iii) Teach environmental awareness and methods to control or reduce environmental effects produced by mining;

iv) Provide a focal point to obtain and coordinate social assistance from specialized agencies rendering this help.

3. Activities

* An area (or areas) where cooperatives are actively mining will be selected;

* Selected groups will be trained in appropriate mining, processing, and recovery methods to raise the productivity of the cooperatives and control or produce the minimum effects in the areas;

* The initial equipment required to start and train the groups will be provided;

* Selected women members of the groups will be trained in mining and administration techniques to guide the cooperatives, explain the methodology and coordinate the technical assistance provided;

* National and international aid agencies that provide social assistance and a focal point will be contacted to assist the cooperatives to coordinate this help.

4. Expected Results

The cooperatives will be trained in rational exploitation and administration of their claims. The poverty level of these groups is expected to be reduced. Their productivity and recovery of the gold will be raised, environmental awareness promoted and coordination of social assistance from government and international aid agencies enhanced. As a result of these measures, it is expected that the cooperatives will have no need to move to other areas, especially those in danger of environmental contamination, such as national parks.

5. Estimated Cost

US$ 518,000 of which US$ 200,000 is for equipment.

PROJECT PROFILE

Project Title: **Role of Women in the Exploitation of Mineral Resources**

Country: People's Republic of China

Sector: Small-Scale Mining

Duration: To be determined

Proposed by: Jennie Jingyi Liu, Chairperson and Research Professor, Committee of Academic Affairs, Research Center for Eco-Environmental Sciences (RCEES), Chinese Academy of Sciences[1]

Estimated Cost: To be determined

1. Background and Justification

Serious environmental problems have occured in the past few years, as addressed by the exploitation of multimetallic sulfide ore in Dexing County, Jiangxi Province.

The annual production of ore in the largest opencast copper mine in China Dexing Copper Mine is presently at about 3x10 tons; in addition, it produces twice the amount of wastestone that is piled into huge dumps. Large amounts of strong acidic wastewater, together with some toxic heavy metals, were generated by the weathering of sulfide minerals and discharged into the aquatic ecosystems. Alkaline wastewater, together with ore tailings from ore floatation processes, reacts with acidic wastewater and aggravates the pollution problem. In the rainy season, pollution extends further on to the riverbanks and affects the downstream of the river, even until the Poyang Lake which is over 200 KM from the mining area. In addition, earth flows occurred and caused disasters. The action of dredging traces of precious metals from river sediments further deteriorated the environment.

As a result, about 25,000 workers, staff members and their families were affected around the mine area and about 20% are women.

---

[1] Contact: Jennie Jingyi Liu, Chairperson and Research Professor, Committee of Academic Affairs, Research Center for Eco-Environmental Sciences (RCEES), Chinese Academy of Sciences, Beijing, People's Republic of China. Tel: (86-1) 2554946; Fax: (86-1) 2562389.

2. Objectives

The overall objectives are to sensitize the community on environmental problems through research projects. The more specific objectives are:

i) to obtain scientific data and suggestions on environmental management at local and provinicial levels;

ii) to train women technicians and scientists acquire the skills and practice necessary through small training courses for women;

iii) to provide opportunities for women to be involved in various environmental activities and become potential activitists.

3. Activities

A study on the "Environmental Impacts Assessment for the Dexing Copper Mine" was carried out by provincial environmental authorities (1985, 1988) facilitating decision making in precise environmental strategies.

Field and laboratory work on the study of "Heavy metal pollution and its ecological effects" in Dexing mining area (1987-1990) supported by Ecological Division, UNESCO, Department of Science & Technology, Germany and the Chinese Academy of Sciences were undertaken; an "Assessment of metal pollution in Dexing aquatic systems" (1987-1990) was supported by local governments.

Women scientists, technicians and workers in Dexing mines, EPA will participate in field work, monitoring, analysis, water treatment etc. Women scientists, technicians and engineers will participate in the field work and laboratory process of research projects. There were 5 women from RCEES (Beijing) and 2 women from Nanchang, Jiangxi in our project. 25% of the participants were women.

However, certain obstacles and socio-cultural constraints are anticipated. Even though most women in mines and local EPA are very much concerned about the development and environmental issues in Dexing, but they are not active in decision-making or in the overall consulting process. There are insufficient research and training programs, inadequate facilites and limited funds.

4. **Expected Results**

The overall understanding on the environmental problems will be enriched due to the research projects. Some scientific data and suggestions will be obtained on environmental management at local and provinicial levels.

Pollution will be decreased by the installation of wastewater treatment facilities and improvement of water cycling systems. Some economical and environmental benefits will be acquired through the recovery of precious metals, including copper from wastewater.

A number of women technicians, engineers and scientists will acquire the skills and practice necessary. Women will benefit from the project results. They will be encouraged to get involved in various environmental activities and become potential activitists. Small training courses could be set up for women.

The project will highlight the need to sensitize the public on the scientific and social issues involved in mining and address the problem of environmental impacts from these activities. The need to organize an international workshop on eco-environmental work for the exploitation of mineral resources and strengthen international cooperation will be highlighted. Projects, such as the conservation of mining areas and environmental planning in mining regions, etc., could be supported by relevant UN organizations.

XI. STATISTICS

PROJECT PROFILE

Project Title: **A Subregional Workshop on Statistics and Indicators on Women and Sustainable Development in Asia**

Country: Regional

Sector: Statistics

Duration: To be determined

Proposed by: United Nations International Research and Training Institute for the Advancement of Women (INSTRAW)[1]

Estimated Cost: US$ 123,568

1. Background and Justification

Statistics, an essential ingredient of planning, is a basic tool for programme monitoring and policy evaluation. However, it is difficult to obtain accurate data on some phenomena which can contribute to inappropriate policy recommendations and less-than-optimal outcomes. Attempts to eliminate gender inequalities and improve women's participation in development have, often, been unsuccessful due to the lack of reliable information or non-availability of data disaggregated by gender.

For instance, the United Nations Conference on Environment and Development (UNCED) stressed the need to strengthen the role of major groups of the population in upholding its recommendations towards global sustainable development (Section III of Agenda 21). In this context, unless more appropriate data and reliable analytical inputs are made available, it is difficult to derive the specific indicators necessary to effectively identify women's inputs while designing and implementing relevant programmes and projects. So, the risk of neglecting women in a programme structure designed to respond to this issue remains high.

The problem with collecting data is twofold. On the one hand, national statisticians or data producers have established data collection and analysis in very broad and general context, nearly denying the relative differences between males and females. The data collection procedures do not, for instance, take into account the striking differences in sex roles and division of labour, within the family and in society at large. Frequently, data collected is not compiled and published by gender. On the other hand, users of statistics-on-women lack the necessary skills to put available data to optimum use and benefit from them. Potential users are often unaware of the amount and type of statistical information that is regularly being collected and compiled at the national level.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 685-2111; Fax: (809) 685-2117.

Hence, the contention that a voluminous amount of data remains underutilized. Furthermore, a full utilization of data requires training to distinguish between the quality of data, select relevant statistical information, appropriate analytical tools and methods for constructing indicators and to make an accurate interpretation of the results. In order to improve the use of available statistical data and identify data gaps that need to be addressed further, a sustained active dialogue and cooperation between the producers and users of data is paramount.

INSTRAW[1], in collaboration with the Statistics Office of the United Nations Secretariat, has initiated a more systematic approach to initiating and strengthening active participation and collaboration between the producers and users of data on gender. An essential purpose of this approach is to encourage greater involvement of users of statistics in the process of data compilation.

Work on collection and presentation of gender-specific statistics is in progress in many countries in Asia. INSTRAW, in co-operation with the United Nations Statistics Office, has undertaken research and training activities for improving concepts and methods for statistics and indicators on the situation of women in some Asian countries. For instance, some research studies have reviewed available statistical sources and identified data gaps particularly on women's contribution and participation in the informal sector, e.g. studies in Malaysia and Indonesia. Six national workshops have so far been organized in China, India, Indonesia, Malaysia, Pakistan and Sri Lanka on pertinent issues indicated above, such as sensitizing statisticians to produce more accurate data on gender differentials, etc. These workshops accentuated the differences in collecting and presenting gender-specific statistics between countries. In some countries, the initiative to start collecting gender-specific data, i.e. gender-specific statistics, has come from women's organizations while in others from the national statistical offices. The main responsibility for the collection and presentation of gender-specific statistics is also allocated to different organizations in different countries.

---

[1] In the area of research, INSTRAW initially launched an extensive review of existing statistical data sources and identification of data gaps, particularly on questions about women's contribution and participation in economic production. Training workshops have also been conducted to address immediate training needs, such as sensitizing both users and producers on the issues and problems concerning statistics on women, generating awareness among statisticians to produce data that more accurately describes the differences in the socio-economic situations of women and men, increasing the sensitivity of planners to adopt policies to the general benefit of segments of the population and plans based on adequate analysis of the economic differentials within the society. These workshops were conducted in Asia, Latin America and Africa. Although the tangible impact of such training workshops have yet to be assessed, some qualitative feedback seem to indicate that a more positive collaboration between the producers and users of statistical data has been established.

2. Objectives

- i) To sensitize the producers and users of statistics on gender issues and on the need for collecting and compiling statistics and indicators on women and development;
- ii) To pool expertise and exchange experiences and ideas in a) the use of available statistical data on women and men; b) presentation, dissemination and uses of such information; and c) data gaps identified for presenting a fuller picture of women's status compared to that of men;
- iii) To identify and develop strategies of presenting in a user-friendly way statistics and indicators most relevant for all countries in the region;
- iv) To suggest ways of improving the quality of gender statistics.

3. Activities

Gender-specific statistics within such countries could be significantly improved by exchange of experiences, ideas and a process of identifying common problems and methods of co-operation between countries. Therefore, subregional workshops are to be held in 1993, with users and producers of gender specific statistics, in the region. A summary of problems identified and recommendations of previous national workshops, conducted by INSTRAW, will be presented to help formulate common action plans for participating countries in improving national statistics and indicators on women, environment and development. The participants should be actively involved in the development of gender-specific statistics in their countries and contribute with information on their work at the workshop. Publications and other ways of dissemination of gender-specific statistics should also be presented.

The workshop is being designed as an integral part of a continuing process of improving the knowledge of both the producers and users of statistics in gender issues/problems and to consequently develop strategies for improving the use and quality of data on women. Hence, specific tasks and activities are envisaged to be accomplished prior to and following the workshop.

i) Pre-Workshop Learning Inputs

A package of learning materials, containing information on gender statistics, is to be provided to participants prior to the workshop. This package will be designed to assist the country participants to take part in, contribute to and benefit from the workshop. The package will also include a pre-workshop project that will involve the producers and users of statistics to work together on a case study to explore information needs and the extent to which existing statistical collections can meet these needs.

ii) Workshop Learning Inputs

The workshop will serve as a forum during which the producers and users of statistics will come together to discuss central issues. Discussion papers as well as country papers will be presented at the workshop.

Under each agenda item, a discussion paper will be presented by a resource person to define and highlight the general issues and problems being addressed. This is to be followed by presentation of the country papers which should logically stem from results of the pre-workshop project activities. Open forum and discussions will follow to provide the participants with opportunities to clarify issues and problems that should be of general concerns. Later, participants will be divided into several groups to draw-up specific recommendations and strategies.

Statisticians should discuss the availability of data and problems encountered in providing accurate and reliable statistics for planning, monitoring and evaluation, and address the issue of data gaps. Users, on their part, should be able to present findings on sex differentials in major policy areas and show how indicators can be used to show these differentials.

Participants

Participants to the workshop, i.e. producers and users of statistics on women and men in the francophone African countries, will comprise of statisticians from national statistics offices, representatives from various government ministries particularly planning; women and development personnel; and researchers with experience in analyzing data on women. Each country will be represented by at least two participants, a producer and a user of statistics.

4. **Expected Results**

At the pre-workshop project, it is envisaged that the participants will be able to :

- define information needs critical to a policy or programme issue in the country;
- identify available information and key indicators;
- identify gaps between needed and available information;
- develop action plans for bridging information gaps;
- develop implementation and monitoring skills.

The workshop is expected to enable producers and users of statistics to jointly develop strategies for improving the use and quality of data on women.

Proceedings of the workshop will be produced and distributed to the participants and to relevant government machineries and organizations. Participants will be expected to carry out specific follow-up actions in their respective countries upon completion of the workshop.

Having identified the types of data available and the key indicators, a friendly-user publication on common important statistical data in the region will be produced. The work with such a publication will, besides producing important and comparable information on women from the participating countries, give incentives to others that have not yet presented gender-specific statistics.

5. **Estimated Cost**

			US$
I.	Preparatory mission		
	a)	Travel of INSTRAW staff/Consultant to the region	5,000
	b)	Per diem	4,368
	c)	Honorarium	2,000
		Total	11,368
II.	Facilities		
	a)	Conference room, transportation, conference services	3,500
III.	Workshop Participation		
	a)	Travel of participants (25 country representatives, 1 resource person)	20,000
	b)	Per diem	37,440
	c)	Travel, per diem and honorarium of the consultant	4,560
	d)	Travel of UNSO and INSTRAW representatives (3 representatives)	12,000
	e)	Per diem of UNSO and INSTRAW	10,984
		Total	84,984
IV.	Promotional activities		
	a)	Posters	2,000
	b)	News briefs, press	1,000
		Total	3,000
V.	Preparation, finalization and publication of report		5,000
VI.	Miscellaneous		1,500
	TOTAL		109,352
VII.	Overhead Costs (13%)		14,215
	GRAND TOTAL		US$ 123,568

PROJECT PROFILE

Project Title:	**Development of Time-Use Studies and Valuation of Unpaid Contribution to Social and Economic Development**
Country:	Global
Sector:	Statistics
Duration:	To be determined
Proposed by:	INSTRAW[1]
Estimated Cost:	US$ 570,650

1. Background and Justification

This document provides a synopsis of the objectives and structure of the project being developed by the International Research and Training Institute for the Advancement of Women (INSTRAW) in close collaboration with the Statistical Office of the United Nations Secretariat and other specialized agencies on time-use studies of women's productive activities. It encapsulates the very first draft of the project programme and through its presentation to the different fora (such as, the Joint INSTRAW/ECE Work Session on Statistics of Women 27-29 April, 1992, and the International Meeting of Time-Use Research Association in Rome 15-18 June 1992) substantive comments and suggestions are envisaged to further define and finalize the integral structure of the project. While much of the initial work towards this issue has been undertaken in the developed region, the project attempts to address the situation of both the developed and developing regions.

One of the issues addressed at the United Nations Conference on Environment and Development (UNCED) is the need to eradicate poverty and hunger. Chapter 3 of Agenda 21 states "the need to manage natural resources sustainably by designing environmental policies that take into account those who depend on the resources for their livelihoods", under which a programme area entitled "Enabling the poor to achieve sustainable livelihood" is identified. The need to address this issue has long been overdue. What should not be overlooked in developing and implementing strategies towards achieving this goal, however, is the way people survived extreme poverty all these years. The survival strategies adopted lend implications to the environmental issues currently being put to the fore.

---

[1] Contact: Ms. Margaret Shields, Director, INSTRAW, Cesar Nicolas Penson 102-A, P.O. Box 21747, Santo Domingo, Dominican Republic. Tel: (809) 685-2111; Fax: (809) 685-2117.

Socio-economic indicators compiled for the recent decades, despite data inaccuracies and inadequacies, strikingly illustrate a remarkable increase in informal subsistence activities and the indispensable role of unpaid work in maintaining the economy. Visual observations further advance the extent to which these activities supported household economy. However, the growing and widening participation in these activities, particularly within the structure of informal sector, has stirred varied reactions. While a great majority believe that strategies should be developed to maintain and diversify informal sector activities and further improve the situation of those in unpaid work, others argue that such a step will, to a large extent, contribute to environmental dilemmas. These issues have a lot of implication to women, since they always predominate in the informal sector. Similarly, the majority of unpaid household chores and household resource management are usually performed by women. They play a crucial role in maintaining and budgeting existing resources and, hence, are indispensable actors in addressing environmental problems.

Unfortunately however, existing data is both inaccurate as well as inadequate to fully assess the extent of women's participation to these activities and to valuate their contribution to national economy. Therefore, unless reliable indicators are provided, the risk of adopting inappropriate policies is highly probable. This project proposal is, therefore, an attempt to improve the quality of data on the productive activities of women and men, on management of time and other resources, and consequently to valuate unpaid work for their proper inclusion in the existing system of national accounts.

Overview: Approach to Recognizing Women's Multifacetic Role in the Economy

Outside the organized market and government spheres with their norms, rules and regulations and corresponding data available for statistical analysis by those who find such activity useful, there is a broad category of activities which is much more difficult to enumerate. Most of these activities fall into what has been loosely called the informal sector. This comprises of activities such as microenterprise and subsistence agriculture, together with the production of goods and services within the household, and unpaid community services provided by household members as well as those activities, predominantly services, that fall outside the informal sector category which are generally considered as pure domestic work.

These activities, whether inside or outside the System of National Accounts boundary for measurement of economic production, equally serve economic functions but have traditionally fallen outside regular national statistical records and, therefore, have not formed part of macroeconomic aggregates. For this reason, the scope, nature and value of informal, domestic and community activities usually remains a matter for speculation. This is a major impediment to sound social and economic planning and, in-so-far as women are believed to be the majority of those involved, the deficiency of data is a major block to the advancement of women. The lack of recognition of the contribution women make to economies through their unpaid work inevitably leads to an undervaluation of women by themselves as well as by others.

There is a need to better understand the contribution which the informal sector and domestic work make to overall economic and social performance. Evidence from some case studies suggests, for instance, that street food production and marketing account for a very significant part of food in the poorer sections of urban areas in developing countries. Similarly, in developed countries, the contribution of women's domestic work which includes caring for the elderly, the young and "maintenance" of members of the household engaged in formal sector activity remain unaccounted for but constitute a significant contribution to productive work which would otherwise need to be provided either by purchase from the private sector or through public provision. Many people, especially women, are engaged simultaneously in the domestic work as well as in the informal sector and/or formal sector activity but the relationships between the three areas of paid and unpaid work are poorly understood.

As demonstrated in Chart 1, there exist a lot of interchange among economic activities and interactions between the formal and informal sectors and domestic household work that ideally ought to be recognized and/or counted either within the traditional economic aggregates or within the proposed satellite accounts system. Because domestic household activities have been provided free of monetary cost they have remained unaccounted for in economic and statistical records. In addition, as long as the concept of informal sector remains elusive, its measurement remains a problem and so are the complex interactions and dynamic movements of activities between the formal and informal sectors.

The theoretical framework presented in Chart 1 does not propose exact definition of the "informal sector" (although ideally, it should encompass the following activities: small-enterprises, subsistence agriculture, household production and voluntary community services) nor does it draw exact boundaries between the informal sector and domestic work. In fact, it is being recognized that only through comprehensive and uniform data recording techniques and common measurement guidelines can activities that fall under each of these categories be commonly defined and valuated. Simultaneous productive activities are usually being carried out by women which the traditional data-gathering techniques cannot capture. The chart, thus, demonstrates (in graphic form) the three major sectors of women's work domain and the interactions of activities between and among them that have to be recognized and counted either within the traditional statistical aggregates or the proposed extended accounts through a common system of data collection, analysis and presentation.

The challenge of capturing women's production outside the organized market and government spheres is many faceted. We are struggling still with data based on the traditional notions and concepts of work and production that are, to a large extent, biased against the work being performed outside the formal market. International debates and research studies have recently focussed on the conceptual and methodological problems involved in capturing and valuating women's non-market production. This has contributed to the recent extensive reviews and revisions of existing international standard definitions of concepts, such as the ones set for the SNA and labour statistics including the classification systems of occupation, industry and status of employment. In this context, it is important to note that attempts have been made and some agreements have been reached to reconceptualize economic concepts and measurement practices that tend to exclude non-market production activities in the whole process of data collection, production and analysis. The concept of production and the boundary set by the system of national accounts has been extended quite considerably and their strict consistency with labour force concepts emphasized. This change should enable all "productive" activities except domestic work to be counted and reflected in the labour force and economic accounts systems, provided the enumeration techniques are adequate.

Thus, undeniably there exists cases where production in the "informal sector" are, to a large extent, already being valuated and counted in economic aggregates, such as in the GDP. Yet, this does not seem to solve the problem concerning women. Existing data system and estimation techniques impede the disaggregation of these accumulated figures by sex and it is impossible to get a precise picture of the contribution of women to national development. Unless further disaggregation is done, women's productive contribution and participation will remain shadowed by men's total economic production.

At the same time, there are extreme situations where the greater part of informal sector production is entirely obliterated from the national accounting system due to (i) inadequate and/or inaccurate statistical data system and (ii) deficiency of techniques to impute values to activities or production in the informal sector and household domestic work.

Within the broad spectrum of women's activities, the valuation of women's work including domestic work in the informal and household sectors and, most importantly, their unpaid work have remained the most problematic. Yet, there does not exist a consensus on the precise delimitations of activities under each category as well as methods of reflecting them in the macro-aggregates.

Debates over approaches and methods of valuing household and domestic work as well as including them in the traditional macro-aggregates such as national accounts and labour statistics are on-going and the existing data systems do not seem to provide practicable solutions to the issues identified.

INSTRAW, in collaboration with the Statistical Office of the United Nations Secretariat and other United Nations agencies is attempting to address this problem through complementary research and training activities. Resulting from the initial activities of the Institute which involved development of methods and training for compiling available statistics and indicators on women and reviewing concepts and methods being used in the conventional data-gathering techniques, problems and issues that require further attention have been identified. These were given special focus under the statistics programme of the Institute during the past several years. Indeed, the invisibility of women in economic statistics was identified as one of the most important issues that need to be addressed and hence has been a major concern within the Institute's research and training programme.

At its twenty-fifth session, in 1989, the United Nations Statistical Commission affirmed the great value of further work in this area to countries, particularly the development of technical reports on methods of compilation, valuation and analysis of women's contribution to development to supplement the System of National Accounts.

In approaching the problems relevant to making women's contribution and participation in the economy visible, the Institute recognizes the prevailing situations that indicate (a) the under-utilization of existing statistics and data, and (b) the inaccuracy and inadequacy of available statistics and data on women. INSTRAW has undertaken interlocking research and training activities geared towards developing techniques and methods of utilizing available data.

One of the most important outputs of INSTRAW in this regard addresses the problem of capturing and measuring women's contribution and participation in the informal sector. Within the UNDP funded project on "Improving the Role of African Women in the Informal Sector - Production and Management" INSTRAW, in close collaboration with the Statistical Office of the United Nations Secretariat, compiled statistics and indicators on women in the informal sector for four African project countries (Burkina Faso, Congo, Zambia and The Gambia) and developed a technique that utilizes data from the different sources to capture and estimate women's contribution and participation in the informal sector.

Training seminars for the users and producers of statistics were conducted in the four project countries to introduce the technique. While the results of these seminars indicated the usefulness of the methodology, conceptual and methodological problems and issues were identified. The problems of the inaccuracy and insufficiency of available data and the difficulties of disaggregating macro indicators to obtain more comprehensive analysis of the underlying mechanisms in the whole production process were highlighted.

Drawing on the result of the training activities, the limitations of statistical information on the informal and domestic productive activities presently available from the Population Census, Household Surveys, Census of Economic Establishments, Labour Force Surveys, Financial Surveys, surveys of small scale and cottage industries and administrative records have been repeatedly demonstrated. While information derived from these has been of importance, one cannot confidently determine the size, contribution and distribution of the informal sector and domestic production to the national economy by this means. Surveys have been observed to leave out those traders who are engaged in selling and producing in the open market who, in the case of Africa, are predominantly female. Results of population censuses and labour force surveys include relevant data on population characteristics and employment status of respondents, but it is difficult to derive statistics on that part of the population which is engaged in the informal sector without further work.

Time Use Surveys

In order to capture participation in the informal and domestic sectors, and to analyze their interface with the market production, much more comprehensive methods of measurements than labour force surveys and population censuses are required. In the market sector, production is measured in monetary value. In non-market production particularly, the first step to measuring work or output is usually in time units.

One important data gathering tool or technique that has been developed to provide required data on patterns and types of activities that women do is the time-use survey. It provides a great deal of information about sequences of activity, how different activities are combined together, patterns of association between various categories of people, geographical distribution of activities and of simultaneous activities undertaken. Time-use surveys, which are inherently sex-specific, allow issues as varied as the management and use of time and space, family organizations, integration within society and membership of societal networks to be dealt with. Data collected enables coverage of a full range of the various types of households and individuals, the time use of women working in agriculture, women living in an urban environment and adolescent girls. The resulting time allocation statistics can be used to measure unpaid activities performed in the home, to analyze the relationship between market and domestic labour, and to serve as a basis for quantifying domestic work in monetary terms comparable to production included in national accounts[1].

Time-Use Surveys in Developed and Developing Countries

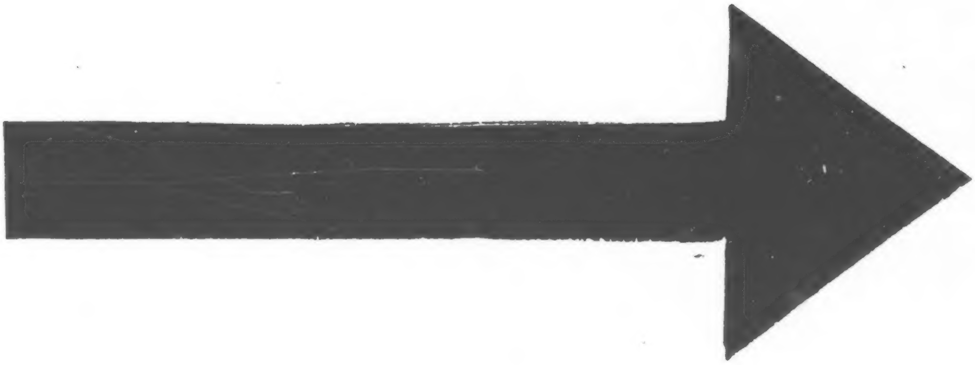
Most of the well-documented studies on time-use techniques come from the developed regions of the world where the methods have the longest tradition and are increasingly becoming an important data-gathering technique. At the beginning, time-use surveys were carried out by academic researchers or commercial enterprises interested in the timing of activities for programme planning and marketing of media. It was limited to sample groups on a small scale, specifically-targeted approach. In the last few decades however, time-use techniques seemed to have gained wider recognition and applications at the national level. Studies in the early 1980s have mainly been handled by national statistics authorities in Europe. Research materials have also grown from samples of a few hundred to samples of thousands, representative of the major part of the population. The role of the academic researchers has changed from that of producers of the material to users of the material. Several European countries have replicated their studies since the 1980s and further modifications and refinements of the methodologies have been undertaken to fully adopt the materials to the objectives of the study and the socio-economic structure of the population.

In New Zealand, following a wide recognition of the importance and the extent of women's unpaid work in the household and the voluntary sector, the women's machinery (i.e. the Ministry of Women's Affairs) in close collaboration with the Department of Statistics designed a pilot time use survey in 1990. The pilot survey carried out by the Department of Statistics was chiefly concerned with testing the feasibility of conducting a time-use survey involving a representative sample of the total population.

The pilot survey confirmed the success of the methodology applied and extracted information that demonstrate clear gender split in domestic activities. From the information collected, three main categories were closely analyzed: unpaid work in the household, unpaid work in the community and leisure activities. Preliminary results claimed that the feasibility of measuring

---

[1] United Nations"Collection and Compilation of Time-Use Statistics to Measure the Participation of Women in the Informal Sector" in Methods of Measuring Women's Participation in the Informal Sector (Series F, No. 46, 1990, pp. 55-92.



production within the household and the voluntary sector; time-use surveys provide other valuable information, such as:
child care arrangements and arrangements for caring for other dependents e.g. the dependent elderly; who does what work; variables affecting labour force participation; changing patterns of work hours; how leisure time is spent; how other discretionary time is used; how unemployed people use their time.

Furthermore, results suggested that time use surveys give planners and policy makers clearer picture of the interactions of the formal and informal activities and the relationships between households, the markets and government activity - or paid work vs. unpaid work. In light of the successful results of the pilot survey, a larger scale survey that is more representative of the total population is anticipated to be carried out in 1992. Thereafter, it is expected to conduct the survey regularly at five-year intervals and to publish valuations of unpaid work as a supplement to the National Accounts[1].

The importance of time-use studies in measuring activities outside the regular, organized market sphere is gaining considerable international recognition and support in the ECE region. For the fortieth plenary session of the Conference of European Statisticians, attention is being drawn to the time-budget survey as a tool to measure activities outside the production boundary, particularly, for the consideration of capturing the hidden economic activities and household production. The use of time-use surveys in capturing comprehensive data on activities outside the production boundaries for a satellite system of the national accounts is being stressed. Furthermore, attempts to reflect activities of private non-profit institutions and volunteer labour within a broader concept of "enlarged economy" (including household) are being emphasized.

Very few time-use surveys have been conducted at the national level in developing countries. Scattered, small-scale time-use studies were conducted by researchers and some commercial groups for very specific sets of objectives designed for specific target groups. Among the more statistically advanced developing countries, India is one that has carried out time-use survey with a sample that is representative of a relatively large part of the population. The survey results yielded important insights into women's work particularly in the informal sector. A comparison of the estimates of women's economic activities derived from intensive time-use methods with those of the national sample survey using conventional methods had demonstrated interesting results indicating the need for further investigation of the varying degrees of work and responsibilities between women and men.

---

[1] News Letter of the Ministry of Women's Affairs, No.19, April 1991.

A recommendation was forwarded by the National Committee on Women's Work and Employment in India for time-use surveys to be designed and carried out based on a larger more representative sample of the total population. At the community level or on smaller scale, time-use surveys have been undertaken in few other developing countries which while equally indicating differences in the role of women and men within and outside the household, were not conducted within a common framework of data collection, compilation and analysis.

The use of time measurements appears to offer the possibility of the development of international units of measurement which could be used in different cultures to measure the duration, sequence and timing of activities. It can thus be considered as one of the potentially most useful techniques of measuring changes in social behaviors, "The delimitation of the study to the 24 hours means a sensitivity to exploring changes: time removed from one activity is necessarily transferred to some other activities"[1]. Time-use surveys usually provide facilities to capture women's activities, productive and non-productive, paid and unpaid.

However, there were very few attempts made to carry out international comparisons of time-use survey results, even for the ones conducted in the ECE countries, much less analysis of the methodology as an effective tool for capturing women's productive activities within and outside the formal market sphere. An extensive effort was undertaken recently by the Statistical Office of the United Nations in compiling statistics and indicators on time-use of women and men in economic activity, unpaid housework, personal care and free time, standardized to the extent possible from the published results of national and sub-national surveys taken between 1965 and 1986.

While the data presented show clearly the significant difference in the time allocation of women and men in selected activities, further methodological comparative analysis is required to see the possible commonalities of concepts and methods being applied which would further lead to developing common imputation techniques to valuate the time expended on unpaid housework and related activities and greater security of comparison in efforts between countries[2]. Problems with comparisons obviously stem from the fact that the different time-use surveys carried out applied different sampling methods, data collection techniques, definition of concepts and tabulation systems that are most appropriate to the socio-economic and cultural circumstance of countries.

---

[1] Niemi, Iiris. Everyday Life in ECE Countries. A comparative study of women's and men's time use, 1990.

[2] United Nations, The Trends and Statistics 1970-1990: World's Women (Series K. No. 8, 1991) pp. 96-103.

A series of studies conducted by Goldschmidt-Clermont on economic evaluation methods for unpaid household work is one of the most comprehensive studies on this issue. She presented an array of different uses of time-use data in imputing values to women's unpaid household work. Goldschmidt-Clermont's studies generally compiled the different possible methodologies of valuing unpaid household work and brought together specific results from different countries, both developed and developing. While definitions and delineating boundaries between and among the different sectors (formal, informal, domestic household work) remains elusive and vary from country to country (depending on the needs of all evaluation purposes), the studies refrained from discussing or defining the activities being measured and from embarking on a comparative analysis of the concepts and methods applied. It was, however, concluded that while no single method answers the need of all evaluation purposes, a combination of methods so far identified could be devised once a common purpose of evaluation has been defined.

While debates on the question of "what to be measured" are ongoing, it is at the same time being recognized that clear distinctions between work and leisure, formal and informal activities as well as between informal and domestic activities are required as a first basic step. Time-use surveys are necessary as the only technique that allows deeper investigations of the value, economic and other, of and individual's non-market activity, and the relationship between paid and unpaid activity both at the individual level and within households[1].

The same conclusions were reached by the INSTRAW/Statistical Office Expert Group Meeting on Measurement of Women's Income and their Participation and Production in the Informal Sector, held in Santo Domingo in October 1986. The report of the meeting has been issued as INSTRAW/AC.3/8-ESA/STAT/AC.29/8.

Hence, taking a step forward, a more profound analysis of the time-use methodologies that have been carried out so far in both the developed and developing countries together with a comparative evaluation of different imputation techniques is essential to establish a commonality of measurements and standardized data collection methodology for capturing and valuing women's activities within and outside the recognized production boundary. Further it is most desirable that any such system be appropriate to the varying socio-economic and cultural structures of the developed and developing societies.

---

[1] Goldschmidt-Clermont, Luisella, "Economic evaluation of unpaid household work: Africa, Asia, Latin America and Oceania", ILO, Geneva, 1987.

Standardization of data collection techniques and commonality of measurements presuppose uniformity in the definition of concepts, classification systems and specific variables. As has been demonstrated by previous studies, there exist a wide array of experiences, resources and facilities between and among countries, most particularly between the developed and developing countries. Moreover, mutual benefit and common agreements can only be derived from confronting the differences and similarities contained in completed studies and work in progress.

Using the experience and results of methodological and empirical works on time-use methodologies, more conclusive steps could be undertaken to design guidelines for reaching a common agreement on most appropriate data collection techniques and methods for imputing values to women's unpaid work.

In light of the above, INSTRAW in close collaboration with the Statistical Office of the United Nations Secretariat, ILO, other specialized agencies and governments, is attempting to develop a more comprehensive and conclusive approach to define, develop and promote common measurements of women's productive activities and best appropriate methods of data collection designed for both the developed and developing countries of the world. As a consequence it is hoped that a more systematic presentation and analysis of the interactions of activities between and among the different economic sectors can be established and reflected accordingly, in macro-economic and statistical aggregates.

2. Objectives

The overall objective is to capture, measure and value women's paid and unpaid work (particularly their productive activities in the informal and domestic sectors) as a tool towards changing attitudes to women and developing appropriate policies for integrating women into national economies in the developed as well as in the developing countries. Further, the project aims: (i) to utilize time-use study techniques for measuring women's unpaid activities in the informal and domestic sectors leading to estimates that are comparable and applicable to the existing statistical data system and that would allow for their inclusion into macro-economic aggregates such as the national accounts system and labour statistics; (ii) to use time-use data/methodology in analyzing the interface between the formal, informal and domestic sectors (or between paid and unpaid work) of women; and (iii) to contribute to the continuing revision of ISCE and to questions of activity status that are of interest to social and economic planners. More specifically, the objectives are the following:

i) to review, evaluate and compare different time use techniques that have been developed and applied in both developed and developing countries for their effectiveness to capture women's paid and unpaid activities in the informal and domestic sectors;

ii) to review the different imputation techniques and consequently identify data gaps and variables required for valuating women's unpaid/domestic work that could be collected through time-use;

iii) to develop robust time-use techniques and methodologies for classifying, measuring and valuating women's unrecorded, unpaid work in the informal and domestic sector both for the developed and developing countries;

iv) to sensitize policy-makers as well as technical experts (including users and producers of statistics) on the importance of time-use statistics in capturing and valuating women's productive activities.

3. **Activities** -

Structure of the Project - PHASE ONE (for 1992-1993 biennium)

A. Project Formulation

A consultative expert group meeting between INSTRAW, the Statistical Office of the United Nations Secretariat, ILO and other specialized agencies and recognized experts in the field will be convened to finalize the structure and theoretical framework of the project as well as the collaborative arrangements between and among the participating agencies. This consultative meeting is necessary, indeed a prerequisite, in drawing up strategies, to ensure that the objectives of the project conform to the objectives of international organizations and that the envisaged outputs will be coherently and collectively promoted and recommended for wider applications.

4. **Expected Results**

PHASE ONE State-of-the-art publication on successful national practices to contain:

i) a comparative evaluation of different time-use techniques and existing methods of measuring and valuing unpaid work in the developed and developing countries;

ii) list of variables required to fully capture women's productive activities and to impute values to women's unpaid work in the informal and domestic sectors that can be collected through time-use techniques.

iii) Standard system of classifying women's activity status that is comparable to the recently/currently being revised classification systems of occupation, status of employment, industry, etc. (ISCO, ICSE, ISIC, etc).

Sub-output 1: Compilation, review and comparative analysis of time-use methodologies and the different imputation techniques currently being used or proposed for valuating women's unpaid work in the informal and domestic sectors for both the developed and developing countries.

Sub-output 2: Identification of data gaps and variables required for capturing women's productive activities and for imputing values to women's unpaid work in the informal sector and domestic household activities.

Sub-output 3: Classification system of women's and men's productive activities.

Sub-outputs 1, 2 and 3 are expected to identify variables that should be captured in time-use surveys for developing common measurement techniques. These outputs will serve as the basic inputs to Phase two, the development of full model time-use methodologies designed for both the developed and developing countries.

Sub-output 4: Expert Group Meeting. Recommendations and comments ensuing from this meeting will be considered as major inputs in the finalization of the state-of-the-art publication.

PHASE TWO Development of Full Model Time-Use Methodologies for Capturing Women's Productive Activities and Imputation Techniques for Measuring/Valuating Women's Unpaid Work in the Informal and Domestic Sectors: Developed and Developing Regions (1994-1995 biennium)

Sub-output 1: Draft full model time-use survey methodologies for the developed and developing countries. The development of common data gathering techniques derives from the result of PHASE ONE ensuring that variables identified in the "state-of-the-art" publication are fully captured in the survey and methodological implications that are comprehensively taken into account.

Sub-output 2: Approaches for imputing values to women's unpaid work in the informal and domestic sectors. The derived imputation techniques should lead to results or estimates comparable and applicable to the existing statistical and classification systems to allow for their inclusion into macro-aggregates, such as the GNP and labour statistics or satellite accounts.

Sub-output 3: Expert Group Meeting. This meeting ought to review sub-outputs 1 and 2.

Sub-output 4: Publication on "Time-use methodology and imputation techniques for capturing and valuating women's work particularly their production in the informal and domestic sectors".

PHASE THREE Testing the methodology in interested developing countries (1996-1997 biennuim)

Sub-output 1: Time-use survey case studies.

Sub-output 2: Reports and further analysis of the methodology and data obtained through testing of the methodology and/or case studies.

PHASE FOUR Introduction of publication-model techniques for international use and policy implications for improving the status of women.

Sub-output 1: Expert Group Meeting for the developed countries to discuss the methodologies being proposed and to review the methods of integrating the estimated value of unpaid work in the informal and domestic sectors to the national accounts and labour statistics.

Sub-output 2: Subregional training workshops in three developing regions on the use and application of the model techniques. Participants would be the primary users and producers of statistics in the countries/regions.

On the whole, apart from providing appropriate indicators on sex differentials in certain activities and on the management of resources, results are also expected to demonstrate the role of informal and/or unpaid work in achieving global sustainable development.

5. **Estimated Cost**

	Budget for Phase One: 1992-1993	US$
I.	General Inputs (for duration of the project)	
I.a	Project Coordinator (24w/m at US$4000)	96,000
I.b	Research Assistant (G-VII 24w/m)	20,000
	Subtotal	116,000
II.	Formulation of Project Structure and Coordination	
II.a	Participation to the International Meeting of Time-Use Research Association, 15-18 June 1992, Rome, Italy	5,000
II.b	Consultative Meeting for Collaborating Agencies (INSTRAW, ILO, FAO and the Statistics Office of the U.N.) 2nd week of July 1992, ILO, Geneva	25,000
	Subtotal	30,000
III.	Research	
III.a	Consultants (24w/m at US$3,000)	72,000
III.b	Travel for two consultants	50,000
III.c	Travel for project coordinator	25,000
III.d	Preparation of two reports (developed and developing countries reports)	2,000
III.e	Annual consultative (monitoring) meeting among collaborating agencies	72,000
	Subtotal	221,000
IV.	State-of-the-Art Publication	
IV.a	Draft consolidated technical report based on the result of III	
IV.b	Expert Group Meeting to review draft	100,000
IV.c	Preparation of the publication	
IV.d	Processing & editing of publication	8,500
IV.e	Reproduction of publication	30,000
	Subtotal	138,500
	Total	505,000
	Overhead Cost (13%)	65,650
	Grand Total	570,650
	INSTRAW Contribution[1]	105,000
	Outside Funding Required[2]	465,000

---

[1] INSTRAW provisions within its current extrabudgetary resources for the 1992-1993 biennium. This is the allocation made to start up the project.

[2] Estimated amount of funding requested from the Government of Japan.

PROJECT PROFILE

Project Title:	**Training in Incorporating Gender Dimensions in Environmental Statistics**
Country:	Global
Sector:	Statistics
Duration:	To be determined
Proposed by:	UN Statistical Office/Department of Economic and Social Development (DESD)[1]
Estimated Cost:	US$ 250,000

1. Background and Justification

The General Assembly adopted a resolution in 1991, inter alia "calling upon relevant organs, organizations and bodies of the United Nations system to coordinate and strengthen their efforts to contribute substantially to data collection and capacity-building in the field of women, environment, population activities and sustainable development" (GA 46/167 Women, environment, population and sustainable development, 19 December 1991).

The Statistical Division has developed methodologies on integrated frameworks and systems of Environment Statistics and Accounting that could serve as a starting point in taking gender concerns into account. The statistics of women's informal sector activities could be extended to include environmental implications. However, all these approaches are still at relatively early stages of development and require further methodological discussion and experimentation.

Within the Framework for Development of Environment Statistics (FDES) and Methods of Environment Statistics, the impact of demography and socioeconomic aspects on the environmental media and human health and welfare have already been covered. Natural resource management and household responses to environmental impacts (notably in primary industries, population growth and urbanization, effects on human health and the overall quality of life) could be the primary fields in which gender considerations, through appropriate classifications, are introduced.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

However, such extensions (of already quite complex data systems) would have to be carefully examined both from the conceptual and data availability points of view. Methodological questions need to be discussed in expert group meetings. Further experience could be gained through country pilot studies and could be shared widely through workshops and seminars. Technical cooperation should assist in building the necessary human and institutional capacities to implement programmes of environmental statistics at the national level.

Within the framework of national accounting, the gender distinction is relevant for the breakdown of value added in labour components. In order to determine whether women participate more or less in economic activities which deplete or degrade the environment and, in turn, affect the health of participating workers, gender participation may be identified in value added of economic activities which affect the environment differently. Thus, the gender breakdown may be introduced in labour inputs, when distinguishing in the System of National Accounts (SNA) between mining, manufacturing, agriculture and other economic activities, or between formal and informal activities. The participation of women may also be identified in internal household activities, such as cooking, child rearing, preparation of foods, etc., which may have different environmental impacts.

The SEEA, which is currently being developed in a Handbook on Integrated Environmental and Economic Accounting, is still at an experimental stage. Its rapid development and implementation has been requested by UNCED as part of the Agenda 21 (Chapter 8, programme area D). The gender classification in the labour component of those activities could be readily introduced, provided statistical capabilities and data availability permit the implementation of such a - relatively ambitious - statistical system. Again, more research and testing in concrete country applications are required for both the SEEA and its extension in particular areas, such as integrated household (satellite) accounting.

2. **Objectives**

This proposal responds to the GA resolution cited above. The overall objectives are to coordinate and strengthen efforts to contribute substantially to data collection and capacity-building in the field of women, environment, population activities and sustainable development. Further, technical cooperation will be directed towards building the necessary human and institutional capacities to implement programmes of environmental statistics at the national level. The more immediate objectives are:

i) To initiate the practice of taking gender concerns into account in statistical activities taking cognizance of environmental implications.

ii) To introduce gender considerations in natural resource management and household responses to environmental impacts through appropriate classifications;

iii) To organise workshops and seminars where the data systems and their extensions (both from the conceptual and data availability points of view) and the findings of pilot studies could be examined in the context of appropriate methodological questions;

3. Activities

It is proposed that, to begin with, the Statistical Division organize an Interregional Seminar on Incorporating Gender Dimensions in Environment Statistics. The seminar would address specific proposals and methods for considering gender issues in the following areas:

a) environmental accounting systems;

b) environment statistics for environmental and related SDA impact analysis;

c) statistics for environment and population analysis;

d) statistics for environment and development analysis, with appropriate training and analysis of new data collection requirements.

Table 2. Framework for the development of environment statistical topics

Social and economic activities, natural events	Environmental impacts of activities/events	Responses to environmental impacts	Stocks, inventories, and background conditions
Use of natural resources and related activities Agriculture Forestry Hunting and trapping Fisheries Minerals,mining and quarrying Energy production and consumption Water use and environmental restructuring Settlements growth and change Population growth and change Construction of shelter and infrastructure Utilities (energy and water supply) Transport Land use in human settlements Emissions,waste loadings and application of biochemicals Emissions and waste loadings Application of biochemicals	Resource depletion and increase Biological resources Cyclical and non-renewable resources Conditions of life-supporting resources (environmental quality) Air quality Water quality Soil and land quality Quality of biota and ecosystems Microclimates Human health and welfare Human health and contamination Impacts of natural disasters Perception of the quality of life in human settlements	Resource management rehabilitation Protection and conservation of nature Management and conservation of natural resources.Rahabilitation ofdegraded environments Human settlements policies and programmes Pollution monitoring and control Pollution research and surveillance Standards control and enforcement Environmental clean-up and Public pollution control facilities Prevention and hazard mitigation of natural disasters Private sector responses Enterprises Households	Biological resources Agricultural stocks Forestry stocks Fishery stocks Fauna and flora inventories Cyclicals and non-renewable resources Hydrologial systems Climate Lithoshphere Mineral resources Energy stocks Non-renewable energy sources Renewable energy sources Ecosystems inventory Stocks of shelter and infrastructure Housing stock Non-residential buildings and other infrastructure Background conditions Demographic and social conditions Economic situation Weather/climate conditions

4. **Expected Results**

Gender breakdowns will be introduced in labour inputs, when distinguishing the System of National Accounts (SNA) between mining, manufacturing, agriculture and other economic activities or between formal and informal activities.

The participation of women will be identified in internal household activities, such as cooking, child rearing, preparation of foods, etc., which may have different environmental impacts.

It will be feasible to determine if women participate more or less in economic activities which deplete or degrade the environment and if this affects the health of participating workers. Thus, gender participation will help identify which value added economic activities affect the environment differently.

Through the inter-regional seminar, gender issues would have been considered in the areas of environmental accounting systems, environment statistics for environmental and related SDA impact analysis, statistics for environment and population analysis, and statistics for environment and development analysis.

5. **Estimated Cost**

The required funding is estimated at $250,000 to cover 25 participants, travel of 5 staff members and resource personnel, cousultants for preparation of documentation and a six-month appointment of a project manager at headquarters. A tremendous level of interest in participation is foreseen and, accordingly, a larger than usual number of participants anticipated. In addition, this would require a fairly heavy investment in basic research, to be undertaken by consultants, to prepare appropriate documentation, as there is little relevant material available on the data requirements for assessing the role of women in sustainable development.

XII. POPULATION

PROJECT PROFILE

Project Title: **Bridging Family Planning Gaps at the Village Level and Awareness Raising on Women's Rights and Roles**

Country: Global

Sector: Population

Duration: 3 years

Proposed by: United Nations Department of Economic and Social Development (UNDESD)[1]

Estimated Cost: US$ 155,000 per annum

1. Background and Justification

A significant factor in halting or decelerating the rate of environmental deterioration has been identified as a reduced population growth rate, especially in the developing world. It is critical that all couples of the world be provided with the means for free choice in determining the number of children they want. However, the data of the World Fertility Survey and the Demographic and Health Surveys, since early 1980's, estimates that in spite of some encouraging progress made in family planning coverage to 50% of the eligible couples in the developing world, this percentage is not increasing at the rate required if it is to respond to the exigencies created by the environmental problems.

It is estimated that there are 300 Million couples in the Third World who would like to practice family planning but have no access to it. With the type of technology that is available, it should be possible to reach out to this population to enable them to exercise their human right which will also benefit the war against environmental deterioration. This technology has been successfully tested in a number of countries, such as Mexico, Kenya and India. It consists of group dynamics centered around the discussion of issues of common concern which, in many cases, commences with viewing of television shows and "soap operas" that focus on the subject of discussion. Many such tested video programmes and "soap operas" are available for immediate use.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Women in Development Task Force, and Director, Science, Technology, Energy, Environment, and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, U.S.A. Tel: (212) 963-6205; Fax: (212) 963-4340.

It is proposed to identify factors that militate against couples adopting family planning through focus group discussions among women's networks. This project will also look into any practices that discriminate against women in decision making processes in crucial aspects of life besides health care, nutrition, education, and social and community participation.

2. Objectives

The long term objectives are to reinforce women's efforts towards environmental protection for attaining sustainable development, by assisting them in reducing population growth and raising women's status. The more immediate objectives are:

i) to organize focus group discussions among networks of women groups at the grassroots level;

ii) to identify factors through group discussions that prevent couples from adopting family planning;

iii) to identify practices that discriminate against women and make women aware of their rights and privileges, so that they participate as equal partners in development;

iv) to employ "group dynamics" techniques for such discussions;

v) to use mass media, such as television propaganda and "soap operas", for assessing women's views and attitudes towards a number of social issues that are prejudicial to women's rights to choices available to men, equal treatment and equal participation in all decision making processes.

3. Activities

In order to test the hypotheses that underlie this proposal and ensure required techniques are available for the exercise, a pilot project will be set up at the grassroots level in the requesting country. With appropriate assistance from the family planning agency, a village or group of villages where such a pilot project can be set up will be identified.

The coordinator of the family planning programme will identify motivated women leaders and hold discussions on the strategy to be employed for identifying factors that hinder family planning adoption and the measures necessary to provide information to women on family planning. Family planning clinics, hospitals, other health ministry and community based delivery outlets will be visited to ensure that adequate services are made available if the demand increases.

Qualified national(s) from the family planning ministry's office, corresponding to the pilot area, will be trained in the techniques of initiating, guiding and supervising focus group discussions and other related skills. An international consultant will be fielded for a period of at least seven months to set up the pilot project and monitor the work programme. The work programme will be evaluated every three months for any adjustments required.

If an international executing agency is included in the project, this agency will ensure timely delivery of international inputs and periodic reviews of the project to confirm that objectives are being met appropriately. On approval of the project, two nationals will be selected, as specified above, for a three-month international training in techniques of focus group dynamics.

The family planning agency of the country will identify the pilot area based on criteria established by the international consultant, selected for a seven-month field assignment and fielded for one-month at the very initial stage. Initial discussions will be held at the family planning office in the pilot area, to appoint a project coordinator to determine the functions and responsibilities of this office. Reconnaissance visits will be made to make arrangements for the site(s) of the project and other logistics. Women leaders will be identified and initial meetings will be held to brief them about the objectives, work programme and timetable of the project and to ensure their cooperation. Equipment required for the project will be procured and delivered by the international executing agency.

The two trainees, at the end of the three-month training period, will be assigned to the pilot area and together with the international consultant (who will be fielded for the second time). They will initiate the technical work programme of the project. The international consultant will determine, during his/her earlier visit, the technical work programme schedule of reviews and the corresponding time-table to be implemented when he/she returns for the six month assignment.

The local skilled and administrative/managerial human resources required will be determined when the more detailed proposal is prepared. However, at least two appropriately qualified nationals (preferably women) will need to be selected soon after the project is approved for international training. An international consultant for a 7-month period divided into two parts - first 1 month and later 6 months - will be required.

At the project site office space, conference rooms and other logistical facilities besides appropriate family planning services will be arranged. The project will need a battery operated slide projector, an overhead projector and portable video equipment besides cassette recorders and a battery operated microcomputer. Locally, furniture and other comparable installations necessary for the project will need to be supplied.

5. Estimated Cost

A detailed year-by-year budget for the three years will be prepared once this project is approved. The government will invest a matching sum of about US$ 150,000 in local currency. Based on the experience gained during the pilot project many such projects can be established in the requesting country depending on its size.

	US$
a) International consultant	70,000
b) Missions of executing agency technical advisor	10,000
c) Local travel of project personnel	15,000
d) International training of two nationals	25,000
e) Local expenses connected with discussion groups	20,000
f) Equipment to be procured internationally	10,000
g) Miscellaneous	5,000
Total	155,000

PROJECT PROFILE

Project Title:	**Rural Women's Time-Use Study for Enabling More Rational and Productive Use of Time**
Country:	Global
Sector:	Population
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 330,000

1. Background and Justification

Although a number of studies have attempted to analyze women's time use, the information available is at a macro-level and does not provide proper guidance for corrective measures. Carr and Sandhu in their study "Women, Technology and Rural Productivity" (UNIFEM Occasional Paper No.6, 1988) state, "The overwhelming picture coming out of the available data on women's time and energy allocation is one of constantly competing demands on women's time and of an unyielding round of energy consuming, dreary and under-remunerative tasks". Health ministries are increasingly recognizing the dire implications of such round-the-clock energy intensive routine but lack information for programmatic interventions. Sanitation experts have to be made aware of the need to take women's activities and resource management into account in the design and development of water systems. Energy experts should see the crucial significance of women's activities in fuel use and conservation. While the importance of time and energy expended on their critical daily tasks by women, in sustaining the family and managing resources, is being slowly recognized this is not accounted for in development planning, especially at local levels.

In some countries, especially Africa, the bottleneck to increased food production by women is the lack of any spare time for agricultural work. Some studies have been conducted in time used in collecting fuel and carrying water; however, the results are analyzed at macro-level which cannot serve as basis for local level planning. Besides few of these studies give any indication of the weight of loads carried, amount of energy expended, impact of this allocation of time on women's health and on other activities vital for family welfare and survival, especially infant and child feeding and care. Due to deforestation and increasing scarcity of potable water, women will have to walk longer distances and spend more energy and time in collecting fuelwood and water, leaving little time for income earning activities. This will also seriously affect the health and nutrition of the family. Hunger, malnutrition and constant gastrointestinal viruses are now known to be linked to fuel and potable water insufficiency besides food inadequacy. Macro-level time-budget studies have increasingly demonstrated the extent to which children's time provides a valuable addition to substitute for adult time allowing mothers and others to carry enough fuel and water for family needs or to undertake alternative tasks.

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Women in Development Task Force, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, U.S.A. Tel: (212) 963-6205; Fax: (212) 963-4340.

Thus, children become an asset and high fertility persists, although when they are very young, mothers have little time to nurse and take care of them. However, when they grow to be five or six years old, these children act as maternal substitutes, a common practice in numerous cultures. Women's lack of time for baby care results in weaning their infants prematurely which, in turn, leads to severe health hazards for infants while shortening post-partum amenorrhea. Further, there is relatively little solid data on cross-cultural differences in time allocated by mothers to child-care, pregnancy and lactation under different socio-economic and demographic conditions.

Most time-use studies are essentially static and give little evidence of the process of change or the effect of different types of changes in the environment, technology, etc., on women and their families. In addition, there is need for better collection and analysis of data by season, household composition, sex, age, etc. As E.Muller maintains in her article "The Allocation of Women's Time and its Relation to Fertility" (1982) that more data are needed on: (a) the circumstances under which time devoted to each of women's roles is elastic or static, and (b) the conditions under which substitutes are found to spending time in any of the role activities.

From the above discussion the importance of small scale focused studies to determine women's time use, especially in family survival tasks, is crucial in order to provide this information to technologists and planners, so they can design time and labour saving devices for releasing women's time for more efficient maternal, familial and economic tasks.

2. Objectives

The long term objectives are to set up a longitudinal data collection, analysis and dissemination module regarding rural women's time-use, so that the information can be used by planners and technologists for lessening women's burdens and releasing their time for more productive uses. Immediate objectives are:

i) to formulate questionnaires, data processing, analyses and dissemination modules that can be free standing or added to normal household survey programmes;

ii) to make the results available to planners, especially engineers, to devise ways of reducing the time and effort of rural women in their daily routine tasks;

iii) to evaluate and improve such exercises.

3. Activities

In consultation with the requesting government's statistical team, a longitudinal survey will be undertaken in an appropriate area, over a 12-month period, to account for seasonal changes in women's work patterns. International assistance will be provided in the selection of a representative sample, designing of the questionnaire(s), field work arrangements, data collection, data processing and analyses, and appropriate dissemination of results among concerned government and other planning groups. Appropriate collaboration from national technical personnel will be sought.

Continuous consultation will be undertaken with the planners and technologists to devise ways of lessening the burden of women's routine tasks. After the technological devices are introduced, another survey will be conducted to evaluate the impact of women's new time distribution. A fairly elaborate work programme that reflects all tasks to be covered for planning, organizing, collecting and processing of longitudinal data, its analyses and dissemination, and a programme of consultations with engineers and planners will be worked out after a request from a specific government is received and international funding source is identified.

3. Estimated Cost

	US$
* Organization of data collection, data collection and data processing for most of which international personnel will be required:	150,000
* Data analyses and dissemination (may be done under the advice of an international expert) and dissemination:	75,000
* Consultations with engineers and planners, and funds for them to invent new devices, their experimentation etc.:	50,000
* A repeat survey for measuring the new pattern of women's time-use	40,000
* Further dissemination of this entire model for national and international use:	15,000
Total budget	330,000

PROJECT PROFILE

Project Title:	**Relationship between Women's Fertility and Environment**
Country:	People's Republic of China
Sector:	Health
Duration:	To be determined
Proposed by:	Zhu Chu Zhu, Professor and Deputy Head, and Chen Zaihua, Assistant Research Fellow, Research Institute of Population and Economics, Beijing Institute of Economics[1]
Estimated Cost:	To be determined

1. Background and Justification

The population explosion is exerting a pressure on the ecological system. In order to relax this pressure, women's fertility rate must be lowered. In this context, all factors that influence fertility need to be studied, such as the birth behaviour in lowering women's fertility.

By 2020, the Chinese population pressure on land is expected to be more than 1.000 at any birth level. It is estimated that with a fertility rate of 3.0, the population pressure on land will increase to 3.371 in 2000; even at a fertility rate of 2.3, the population pressure on land will still increase to 2.936. This will have serious consequences to natural resources, such as cultivated land, forests and fresh water resource, etc.

---

[1] Contact: Zhu Chu Zhu, Professor and Deputy Head, and Chen Zaihua, Assistant Research Fellow, Research Institute of Population and Economics, Beijing Institute of Economics, Xian Jaioton University, Beijing, People's Republic of China. Tel: (86-1) 3355011-3384.

2. **Objectives**

The overall objectives are to enhance women's role in lowering the fertility rate and protecting environment. The more specific objectives are:

i) emphasize the system of coordination in lowering women's fertility;

ii) strengthen the construction of communal environment and control the non-economic factors of population growth, especially the traditional birth ideas of mothers-in-law and husbands;

iii) improve women's cultural levels and employment rate, increase their income, strengthen women-power in family decisions, especially the rate of industrialization and urbanization;

iv) help women realize the relationship between themselves and environmental protection.

v) improve opportunities for women to avail teaching resources;

vi) strengthen women's social participation and improve women's status;

3. **Activities**

Women have participated in the fertility lowering activities for more than twenty years. Presently, about 79% of birth controlling measures are being used on women. Activities will focus on lowering the fertility rate in women and on improving the level of coordination in various departments. It will also focus on educating the community on the status of women, especially on traditional birth practices.

4. **Expected Results**

If the fertility rate can be lowered to 2.0, the Chinese population pressure on land, especially on cultivated land, will be lowered to 2.423 and 2.345 in 2020. This will reduce the overall pressure in the country.

The project will have a direct influence on women's cultural level and their employment rate, thus, contributing to an improvement in the overall socio-economic participation.

The project will also transform women's traditional lives in the process of focussing on lowering fertility rates. It will accelerate the process of forming a new women's group.

XIII. AGEING

PROJECT PROFILE

Project Title: **Human Resource Management, The International Senior Corp for Environment**

Country: Global

Sector: Ageing

Duration: To be determined

Proposed by: Alicia Paolozzi, Vice President, International Council of Women[1]

Estimated Cost: To be determined

1. Background and Justification

The International Council of Women, through its Eightieth National Council and the Standing Committees on Aging, is committed to the formation of innovative programmes, to mobilize and use the valuable skills and experience of retired volunteers, in serving the rural and urban communities.

Retirees (often starting at the age of 50) in Centers for the Aging would bring, to the Senior Coup, their ability to educate, evaluate, monitor, lobby and create inter-generational programmes for grassroots application. The services of the Senior Coup for Environment will become increasingly important, globally, as the problem of single and abandoned elders grows.

The International Senior Corp for Environment provides a channel for tapping this potential resource and utilizing the often unused skills and talents in service to the earth and the environment.

2. Objectives

The overall objective is to mobilize and use the valuable skills and experience of retired volunteers to serve in rural and urban communities.

---

[1] Contact: Ms. Alicia Paolozzi, Vice President, International Council of Women, 870 United Nations Plaza # 18F, New York, NY 10017, USA. Tel: (212) 897-1278.

The more immediate skills are to form and strengthen a Senior Coup by employing the educational skills and expertise of retired and senior citizens through the International Network for "The Environmental Mission".

3. Activities

The seniors may be used for various purposes, such as teachers, organizers and programme executors of community activities. This may be accomplished by involving the following organisations:

i) A.A.R.P.(The American Association of Retired Persons);

ii) Banyan Fund (the United Nations sponsored funding mechanism for the Aging);

iii) Local Municipalities and Authorities (International Union of Municipalities and Local Authorities);

iv) The Program for Seniors of the Missouri Botanical Garden;

v) Physicians for the Environment.

Many other such organisations, interested in collaborating, are considering this as an opportunity for effective action and communication for environmental issues at local levels.

4. Expected Results

The project will restore dignity, purpose and meaning to older individuals who may have come to doubt the real meaning of their lives.

The International Senior Corps for the Environment, acting through Aging Centers in all forms throughout the world, will harness immediately available skills, volunteer time, revived commitment and self-fulfillment for the ultimate mission of the elderly. For environment itself this approach provides realistic proving ground for community programs.

PROJECT PROFILE

Project Title:	**Increasing the Participation of Older Women**
Country:	Global
Sector:	Ageing
Duration:	To be determined
Proposed by:	Judith Bograd-Gordan Ph.D., Chairperson, Working Group on INSTRAW; NGO Committee of the Status of Women at the UN, New York, and Associate Professor of Sociology, University of New Haven[2]
Estimated Cost:	US$ 191,800

1. Background and Justification

In 1992, the United Nations played a catalytical role in focusing the world's attention on its hopes for peace. The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, put forth the Agenda 21, which lays out the hopes of the worlds people once again. The 10th anniversary of the World Plan of Action on Aging gave rise to targets for the next decade as the nations of the world explore ways of utilizing the talents of the old. The Summit on Social Development provides an opportunity to turn attention to the connections between environment, development, peace, security and human aging by calling attention to the need to examine the processes of social integration. This project addresses these needs.

Scientists recognize that biological, social, economic, psychological and spiritual development are all linked together because human beings age in societies and cultures shaped by the meaning given to persons and their environments. For example, the increasing number of older women can be viewed as a major problem for the world if attention is focused only upon their frailties and diseases. Instead, attention may be focussed on the identification of skills that helped them survive to old age, in spite of adversities encountered. By focusing on the knowledge that older women can contribute to their children, grandchildren, communities and the nation-states, this untapped resource may be mobilized. Older women, in turn, can learn new ideas and technologies (see FLS). This approach reinforces the theory that sustainable development depends upon generational linkages as people of all ages grow older together.

---

[2] Contact: Ms. Judith Bograd-Gordon Ph.D., Chairperson, Working Group on INSTRAW; NGO Committee of the Status of Women at the UN, New York, and Associate Professor of Sociology, University of New Haven, 300 Orange Avenue, West Haven, Connecticut 06516, USA. Tel: (203) 288-7815; Fax: (203) 937-0756.

INSTRAW has played a catalytical role in this process by inviting attention to the age as well as gender in studying women, environment and development. This effort may be further reinforced by dissemination of information.

As proposed by the Geriatric Society of India, speakers may be invited to grass-roots groups to discuss Agenda 21 and the World Plan of Action on Aging in order to mobilize action at the local level. The leadership of older women in rural areas is often based in their homes and villages. Older women who were brought up in rural areas, but now live in cities often play major leadership roles in their families, religious organizations and communities. These women rarely find their way to international conferences. Many of them are not literate and do not read the documents that result from such activities. Others are visually impaired. There is, therefore, a need to find a way to bring the ideas to them which is served by this project.

2. Objectives

The long term objectives are to engage in comparative studies and examine the ways by which social locations shape the roles, problems and possibilities of older women. More specifically, the objectives are:

i) to provide information about the United Nations activities and facilitate access to training and social support that elderly people require in order to utilize the resources of INSTRAW, UNSCD and other relevant United Nations agencies and bodies;

ii) to demonstrate innovative proposals, so they may serve as a model, on how community's capacities maybe strengthened to provide services and programmes needed to achieve goals, such as the suggestions submitted by the Geriatric Society of India's on spearheading educational programs on Agenda 21 and the World Plan of Action on Aging.

iii) to evaluate the effectiveness of this activity by developing coalitions to address relevant issues that include elderly members of communities.

3. Activities

The project will focus on forming an interdisciplinary, international advisory board comprising of 15 members. Activities will be directed towards developing appropriate educational materials.

Education, training and support services will be provided for older women involved in community activities, in the United States and India, through women's clubs, aging network service providers, religious groups and other relevant organizations. In each country, two groups of women will be targeted for the demonstration project.

The evaluation of the impact of the project activities by the development of appropriate follow-up meetings as well as quantitative and qualitative measurement instruments will be undertaken.

The project will produce and disseminate a final report.

4. Expected Results

The implementation of the project will facilitate an on-going collaboration between the United Nations agencies and local organizations, including elderly women, which will continue beyond the completion of the project cycle.

As a result, an increasing number of older persons will become involved in achieving UN targets. Further, the activities of this project will break down stereotypes of the North and South, contributing to increasing cooperation and coordination of policies in areas of mutual concern.

Related research projects will be developed. A model will be designed that will be used in facilitating the social integration of the elderly into the global society.

5. Estimated Cost

Project Personnel	In US $ (Budget Period - One Year)		
Position	**Base Salary**	**%Time**	**Total**
Project Director	60, 000	50	30,000
Program Co-ordinators			
USA	35,000	100	35,000
India	35,000	100	35,000
Program Evaluation Assistant	30,000	75	22,500
Secretary			
USA	28,000	50	14,000
India	28,000	50	14,000
Fringe benefits (24%)			
Induced costs (10%)			
Advisory Board (15 people, 2 meetings)			15,000
Lecturers (Honorium and travel)			4,000
Equipment- Fax machines			600
Travel			
Staff travel			8,000
Board travel (going rate at time plus conference center)			
Other Expenses			
Telephone 1/d			1,200
Photocopying			4,500
Resource materials			5,000
Postage			3,000
GRAND TOTAL			US $ 191,800

XIV. DESERTIFICATION

PROJECT PROFILE

Project Title:	**Women in the Use of Appropriate Technologies for Control of Droughts and Desertification**
Country:	Global
Sector:	Desertification
Duration:	To be determined
Proposed by:	United Nations Department of Economic and Social Development (UNDESD)[1]
Estimated Cost:	US$ 200,000

1. Background and Justification

Deforestation, destruction of water resources and mismanagement of land resources, in many developing countries, have resulted in droughts and desertification. Besides, slash and burn agriculture has led to soil erosion, environmental degradation and reduced food production.

Village women, if provided with adequate training, are in a unique position to solve this problem through the application of simple and appropriate technologies for the conservation and protection of land and water resources. For example, village women can assume a leading role in implementing appropriate watershed management techniques and in the application of integrated farming and alley cropping technologies to restore the degraded land.

2. Objectives

The long-term objective of the project is to promote the role and participation of women in the use of appropriate technologies in the control of droughts and desertification that will effectively contribute to environmental protection and sustainable development. The more immediate objectives are:

i) to accelerate the role and participation of women in the protection and conservation of land and water resources;

---

[1] Contact: Ms. Dunja Pastizzi-Ferencic, Chairperson, Taskforce on Women in Development, and Director, Science, Technology, Energy, Environment and Natural Resources Division, UNDESD, One UN Plaza, New York, NY 10017, USA. Tel: (212) 963-6205; Fax: (212) 963-4340.

ii) to enhance the technical, organizational and managerial capabilities of women in combating droughts and desertification;

iii) to improve the quality of life of women through better education, technical skills and income generating capabilities.

3. Institutional Framework

The project could be a joint effort of two or more of the following agencies: government, local community, United Nations agencies (UNDESD, INSTRAW, UNIFEM, etc.), international banks and donor agencies, and non-governmental organizations.

The possible areas for UNDESD/INSTRAW technical assistance in the project include inter alia:

* Providing technical assistance/advisory services in the preparation of a project document for submission to donors;

* Assisting countries with the execution of the project upon the receipt of funds.

4. Activities

i) Organize training workshops and seminars to exchange knowledge and experience on the effective role and participation of women in droughts and desertification control; and

ii) Launch pilot women projects on droughts and desertification control in selected countries, which can then be replicated in other countries.

5. Expected Results

* Increased role and participation of women in droughts and desertification control;

* Conservation, protection and restoration of watersheds (at least in the project areas);

* Increased technical, organizational and managerial capabilities of women in this field.

6. Estimated Cost

Training workshops	$100,000
Pilot projects	100,000
TOTAL	$200,000

PROJECT PROFILE

Project Title: **Pastoral Community and Resource Development Project in Mandera District, Kenya, (UNSO Pipeline Project Brief - UNSO/KEN/91/X02)**

Country: Kenya

Sector: Desertification

Duration: 5 Years

Proposed by: United Nations Sudano-Sahelian Office (UNSO)[1]

Estimated Cost: Approximate UNSO contribution: $ 1,600,000;
Expected gvt. contribution: K SH 18,733,000[2]

1. Background and Justification

One of the major manifestations of desertification in the Sudano-Sahelian region is the degradation of the rangelands. Previous interventions to rehabilitate rangelands have had little impact instead have aggravated the process of degradation. However, a few successes occurred in projects where pastoralist have participated in project design and implementation. Based on the lessons learnt from past interventions, UNSO has decided to launch a few pilot projects in the region in order to test and develop approaches which could be replicable in similar socio-economic and ecological environments.

This project was formulated to be in line with the Arid and Semi-Arid Lands Environment Action Plan (ASAL EAP) which has been implemented in conjunction with an on-going initiative of assistance to the MRDASW. The programme of assistance (jointly funded by the World Bank, GTZ, the Government of the Netherlands and UNSO) seeks to take the already formulated Environmental Action Plan and ASAL EAP further through the formulation and implementation of District Environmental Action Plans (DEAPs).

---

[1] Contact: Mr. Firouz Sobhani, UNSO, Room FF-0904, 304 East 45th Street, New York, NY 10017, USA. Tel: (212) 906-6614; Fax: (212) 906-6345.

[2] The project is being implemented; however, equivalent funding will be required for replication elsewhere.

This proposal will, therefore, build further upon the DEAPs. The project was formulated by a team comprising of one UNSO consultant, one senior staff member from the Ministry of Reclamation and Development of Arid and Semi-Arid Areas and Wastelands and one senior staff from the University of Nairobi. In the process, the team interacted closely with the intended beneficiaries through a number of meetings held with communities and community leaders. A policy area that remains to be addressed concerns how materials and credit to informal groups can best be channeled to informal grassroots groups. This will be clarified further upon identification of funding for the project.

2. Objectives

The long term objectives are to rehabilitate rangelands that have been affected by the process of degradation by adopting a participative approach, based on the lessons learnt from past interventions.

More specifically, to launch a few pilot projects in the region in order to test and develop approaches which could be replicable in similar socio-economic and ecological environments.

3. Institutional Framework

Different execution arrangements have been discussed, e.g. a suitable NGO as an executing agency. The World Bank has also expressed and interest in executing the project.

The Government of Kenya is committed to assigning transfers of project staff already working in the area. Seven new staff are required viz: three Veterinary Officers. one Animal Health Assistant, two Assistant Social Services Officer and one District Range Officer. Required housing and office space will be provided by the Government.

4. Activities

The project will finance three months technical assistance and 120 months of national professional technical assistance. It will cover sub-contracts for a socio-economic survey, a water resources study, production of earth hauling carts, construction of dams and the rehabilitation of Mandera Boy's Town Leather Workshop; training activities include national training seminars and on short scholarship abroad; equipment includes dam and well maintenance materials and equipment for nurseries as well as vehicles.

5. **Expected Results**

On the whole, the project will enhance the capacity of the pastoral community in Mandera District, to plan, develop, manage and maintain on a sustainable basis, its land and resources affecting the livestock sub-sector (rangelands, water, animal health, animal marketing). It will assist an appropriate, community based, pastoral administration to preserve its links with the existing local government administration. It will also assist local co-operatives and groups in livestock trade and alternative income generating activities. Moreover, a livestock restocking programme will be established for destitute pastoralist affected by war (refugees) and drought. Finally, the project will enhance the capabilities of the district-level government personnel in sustaining and replicating this type of participatory, community based, land and resource development and management process.

The main target population is the pastoral communities both settled and mobile as well as the destitute families in the entire District. Some activities will directly benefit about 3,000 people (grants, loans and training), while others will reach almost all people in the District (e.g.water development, animal health, range improvement). It is therefore estimated that the project will benefit a total population of about 150,000 people.

6. **Estimated Cost**

	US$
* Personnel	260,000
* Sub-contracts	300,000
* Training	120,000
* Equipment	460,000
* Miscellaneous	315,000
* Contingency	145,000
Total	1,600,000

XV. PUBLIC INFORMATION

PROJECT PROFILE

Project Title:	**"Crucial Crises, Women's Dilemma" - A Video Production for Education of the General Public on Women's Decision Making on Survival Needs Versus Environmental Needs**
Country:	The Gambia
Sector:	Public Information
Duration:	8 months: 3 months each to develop program, and complete the pilot study and evaluation; 2 months for revision and production
Proposed by:	Women's Bureau, Banjul[1]
Estimated Cost:	To be determined

1. Background and Justification

Women face crucial crises when coping with decisions regarding sustainability of productive ecosystems and maintaining a survival strategy for family well being, for example the need for fuelwood versus deforestation, the need for garden plots versus soil erosion, and problems of waste disposal and water pollution, among many others. In newly industrialized areas sacrifices are made for employment security.

The lack of visibility of these problems need to be addressed so that women may become active policy makers in environmental agencies and bring the real world issues of women's lives into the planning processes. Mass media does not present information about these difficult decisions and most of the environmental media do not face the need for difficult decision making activities.

---

[1] Contact: Ms. Coumba Ceesay Marenah, Deputy Executive, Women's Bureau, State House, Banjul, The Gambia. Tel: (220) 28733 or 28730; Fax: (220) 27034 or 28921.

2. Objectives

To produce and distribute an effective video program, a mass communication tool that will educate the public on dilemmas women face when making decisions on issues concerning livelihood crises and environmental problems. More specifically the objectives are:

i) to train women in managerial communication skills which will empower them to become change catalysts;

ii) to facilitate acceptance of women as decision makers in the environmental agencies, both governmental and non-governmental;

iii) to enable women to become activists in national environmental movements.

3. Activities

Orientation workshops are to be conducted. Curriculum and educational materials are to be developed comprising of self-study modules, case studies for group discussion and simulation exercises. Pilot programmes are to be conducted using the project materials test validity and efficacy with a systematic evaluation. Training programmes with Manuals and Instructors' Guides are to be produced based on revised and evaluated materials. Consultancy services are to be utilized. In addition, the following are to be carried out:

i) Identify ten crises areas in various parts of the world and choose five cases to be used in the video tape;
ii) Prepare project plan and script for video production;
iii) Contract local video companies to tape five crises case studies;
iv) Review and edit the material, and finalize the tape;
v) Distribute and evaluate the impact.

4. Expected Results

Workshops will be conducted and curriculum and educational materials will be developed. Pilot programmes and training programmes will be conducted.

PROJECT PROFILE

Project Title: **Multi-Media Chain-Reaction Project For Forming Public Opinion on Environmental Ethics and Protection from the Women's Viewpoint**

Country: Brazil

Sector: Public Information

Duration: To be determined

Proposed by: Instituto de Acao Cultural (IDAC)[1]

Estimated Cost: US$ 17,000

1. Background and Justification

To an increasing extent, Non-Government Organizations (NGOs) are achieving greater recognition of the importance of their work in redeeming the citizenship of women. The impact tends to increase with the awareness of NGOs on the need to join forces in common projects that employ the full potential of specific skills, thereby, broadening the quality of their intervention. Within the spirit of this approach, as conceptualized by Brazil's Cultural Action Institute, (IDAC - Instituto de Acao Cultural) and the Women's Information, Assistance and Project Implementation Center (CEMINA - Centro Mulher, Informacao, Assessoria e Execucao de Projeto), attempts are being made to implement training and information projects for the women of Rio de Janeiro, winning editorial space which, free from commercial interests, ensures the pertinent nature of the information.

Various educational experiments carried out by CEMINA and IDAC have shown that, in the present day, the media is one of the tools best suited to the new requirements of urban societies.

---

[1] Contact: Dr. Joel Souto-Maino, Public Policy and Planning, Post-Graduate Programme, Universidade Federal de Santa Catarina Campus Universitorio-Trinidade, Florianopolis, Santo Catarina 88049, Brazil. Tel: (55-482) 319365 or (482) 319539; Fax: (55-482) 344069 or 319585.

As UNCED (United Nations Conference on Environment and Development) Rio-92, to be held in Rio de Janeiro from 1-12 June 1992, it is a privileged moment for launching a series of intense discussions on a new system of ethics and ways of setting up alternative forms of collaboration among people in the planet.

IDAC

IDAC, a non-profit organization initiated in 1980, has head offices in Rio de Janeiro. It is dedicated to research, surveys, training and monitoring of public policies and social intervention projects in the areas of education, health-care, quality of life and the environment. The priority target groups are women, children and young people.

Its permanent staff comprises of twelve professionals trained in the human and social sciences. Diverse projects are supported by a varying number of community leaders and social workers operating at the local level and as specialized consultants. The team is co-ordinated by the Executive Director of the Institute, Dr. Rosiska Darcy de Oliveira. IDAC carries out research and survey projects while also assisting and counselling various United Nations agencies. Projects Involving Interaction with United Nations are:

* Planning and implementation of a nationwide adult literacy training program in Guinea-Bissau and Cape Verde (1974-79, UNESCO/World Council of Churches/Canadian Foreign Development Aid Council);

* Consulting for the World Health Organization on the use of the education system as a support network for primary health-care programmes in under-developed nations;

* Assessment of the application in Brazil of the International Convention on the Elimination of all Forms of Discrimination Against Women (UNESCO, 1984-86);

* Survey of Women's Cultural Capital, Migration and the Quality of Life of Women in Rural Areas of Brazil (ILO, 1987-1989);

* Survey of Women's Culture and its Contribution to the Reinvention of Social Relations (UNESCO, 1989-91).

CEMINA

The objectives of CEMINA include promotion and assistance for projects that have a direct effect on the full development of women. They give high priority to initiatives in the communications field which encourages exchanges that inform and educate a specific social sector (in this case - women) as well as disseminate this information democratically and extend the areas where the women's movement can publicize its activities and discuss its issues with society as a whole. CEMINA believes that setting up networks and their unification through communication represents one of the main tools for the empowerment of grassroots women's groups that have for many years been struggling to improve the quality of life of the population as a whole.

Since March 1988, CEMINA has been producing a radio program aimed at female listeners in the State of Rio de Janeiro. This weekly half-hour program called FALA MULHER (Women Speak) has been on the air for two years, sponsored by the Rio de Janeiro City Social Development Bureau, in the first year, and by a number of local NGOs, during the second year. This program has been broadcast daily from 0805 to 0830 on Radio Guanabara, 1360 KHZ-AM, as of November 1990 onwards.

It highlights topics of interest to a female audience, such as civil rights in the labor area, violence, health-care, political participation, the problem of abandoned children, and other aspects of women's daily lives, including environmental issues. Some topics appear daily, while others vary according to the day of the week. We try to ensure that this program presents a thematic homogeneity through material from our team of radio-reporters or through live interviews.

This program has prompted an enthusiastic response among women's movements in the State of Rio de Janeiro and other parts of Brazil. The audience in Rio de Janeiro is assessed through daily promotions announced at the start of each program. An average of 20 to 30 phone-calls are received daily which is estimated by polling organizations as equivalent to an audience of 100,000 listeners. Many have applauded the program for its initiative and benefits represented for women. This program also serves as a model in other states for experiments in developing similar radio programs by and for women.

This positive feedback has encouraged the production team to expand its range of topics, such as the issue of women and the environment. There is widespread interest among women's groups in Rio de Janeiro in expanding this discussion, as the city will host the Earth Summit in June 1992.

The CEMINA team consists of seven communication experts who, in addition to the FALA MULHER program, also organize a sizable Documentation Center which is open to the public. This has a valuable collection of publications, clippings and magazines on women's topics. In addition, it works with government institutions in a training program aimed at preventing violence against women.

Projects Involving Interaction with Brazilian Government Agencies

IDAC carries out research and survey projects while also assisting and counselling various government agencies at Federal, State and Municipal levels, in order to further the spread of democracy and improve public policies in social areas, particularly in meeting the basic needs of women, children and young people.

- Advising the Rio de Janeiro Municipal and State Education Bureaus on education planning, teacher training and the production of educational materials in order to adapt schools to the basic requirements of culturally underprivileged children (1984-87);
- Counselling the Ministries of Health and Welfare and the Integrated Women's Health Care Assistance Program for the preparation of a national health policy that corresponds to the needs and realities of low-income women (1984-87);
- Counselling the National Women's Rights Council and its various State Councils on the topics of health-care, sexuality, discrimination and violence against women (1985-to date);
- Project with the Rio de Janeiro Municipal and State Education Bureaus on the implementation of permanent women's health support structures in all units of the State Public Health Service (1988-to date).

Projects Involving Social Intervention with Grassroots Movements

Throughout its career, IDAC has given top priority to working directly with community associations and grassroots groups on the implementation of projects that bring about immediate concrete improvements in their daily lives. These experiences also offer room for the preparation and testing of alternative proposals for social participation and development. Throughout its history, women have always been the priority target of IDAC.

- Women's education project highlighting preventive actions in the fields of health-care and the environment (Paraty, 1980-84; Nova Iguassu, 1985-88; 12 pilot areas throughout Rio de Janeiro State, 1989-to date);

- Social intervention survey of six favela slum communities in Rio de Janeiro with emphasis on problems that affect women and young people;

- Intervention survey on the interaction between family violence, inadequate scholastic achievement, drug use and social ostracism, with preparation and test of alternative strategies for working with battered wives, young people, single mothers and street kids (Rio de Janeiro, 1991-to date).

Current IDAC Efforts Aimed at Women and the Environment

Education and health care at the family and community levels, improvement of the quality of life and preservation of the environment are topics that are interwoven into the fabric of all research, survey and social intervention projects carried out by IDAC. The Institute currently has a wealth of first-hand experience in working directly with women in the low income sectors on these issues as well as a systematic knowledge of government policies and a broad-ranging awareness of possible strategies for interaction with the state.

The legitimacy achieved by IDAC in handling issues involving women and the environment is reflected in the election of its Executive Director, Dr. Rosiska Darcy de Oliveira, to represent the Brazilian Women's Movement at the National Coordination Offices of NGOs Global Forum preparing for the June 1992 Earth Summit. In order to carry out this mandate to the full, IDAC is launching a process of interaction with women's organizations and networks throughout Brazil and elsewhere in the world, with a double objective:

i) develop a Women's View that reflects the concerns, viewpoints and efforts of women in the area of development and the environment;

ii) contribute to the organization of events arranged by the women of Rio de Janeiro under the aegis of the 1992 Global Forum.

Publications

IDAC has published a series of books leaflets and documents (in addition to several audio-visual materials) that explain its research and survey work, theoretical background and interventions. Outstanding publications in the field of Women and Environment are:

- Vivendo e Aprendendo (Living and learning);
- Linda Imagem da Mulher (Beautiful Image of Woman);
- Mulheres em Movimento (Women in Movement);

- Violencia Domentica (Violence in the Home);
- Guia de Defesa dos Direitos da Mulher (Women's Rights Defense Guide);
- Mulher e Educacao (Woman and Education);
- Guia de Defesa das Mulheres contra a Violencia (Women's Defense Against Violence Guide);
- Mulher e Sexualidade (Woman and Sexuality);
- Para Viver o Amor, Ter Filhos (Loving, Living and Children);
- Uma Escolha Consciente (A Deliberate Choice);
- Mulheres e a Saude (Women and Health);
- Aprender a Viver Melhor (Learn to Live Better);
- Vida de Mulher, Elogio da Diferenca (Woman's life in Praise of Difference);
- Ensaios Sobre o Feminino (Essays of the Feminine).

2. Objectives

i) Preparation of a tri-lingual publication (English, Spanish, Portuguese) on ethics, based on the views and experiences of women, designed to act as a mouthpiece for making women's views known to the world in general;

ii) Set up a news desk covering women and the environment, responsible for providing items for the FALA MULHER radio program and a weekly television spot;

iii) Encourage the participation of Rio de Janeiro housewives, working women and women in recognized movements (trade unions, women's centers, consciousness-raising groups) in the discussion of issues on the environment and measures to solve problems triggered by environmental degradation;

iv) Set up information services offering advice on alternative ways in which women can help diminish the impact of environmental degradation in a city such as Rio de Janeiro, lacking an adequate public service infrastructure. This sector would include information on experiments underway in other parts of the country;

v) Prepare campaigns on topical issues involving environment to prompt a positive response in the form of changing habits through public opinion, specially for women particularly in the case of women.

3. Activities

A publication is proposed to be distributed during Rio 92. This publication would consist of about 50 illustrated pages, covering a new system of ethics, that could be produced on the basis of a feminine culture emphasizing affection in all relationships. This publication will reflect current trends that downgrade politics in favor of ethics. It will share women's perception on ethics, i.e. that ethics are popularly discussed because there is a burning desire to keep alive something beyond price, that which cannot be bought and has no place in the market.

A FALA MULHER programme for radio and television is proposed. This is a chain of information aimed at women with an emphasis on environmental protection. A daily radio show and a weekly ten minute television spot would reinforce the impact on the formation of public opinion regarding environmental issues. The programme comprises of the following outline:

Radio

- Opening of FALAL MULHER with acknowledgements of co-sponsors;
- News items with emphasis on environmental topics;
- Set pace on events organized by various social movements within Rio-92 - women, children, Indians, Blacks;
- Interview on a topic of current interest;
- Phone in discussions;
- Flexible spot for topics of interest to women, such as health-care, work, violence, education and culture.

Television (10 minutes weekly)

- Opening of FALA MULHER with acknowledgements of co-sponsors;
- Weekly news feature illustrated with videos and live reports expressing women's views on the week's news in the environmental area;
- Information on resources in public and private sectors that could help women's groups preserve the environment;
- Reports on unusual solutions found by women to cope with problems caused by environmental degradation;
- Earth Watch Call-in feature;
- Interview of the Week.

4. Expected Results

Tri-lingual publications (English, Spanish, Portuguese) on ethics would have been prepared, based on the views and experiences of women and make women's views known to the world in general. A news desk will be established covering women and the environment and provide items for the radio and television programmes.

Women would have been organized into recognized movements. Information services will be set up to offer advice on alternative ways in which women can help diminish the impact of environmental degradation in the city. Campaigns would have been prepared on topical issues connected with the environment directed to change habits through public opinion.

5. Estimated Cost

Production costs (telephone, fax, office materials, video rental, miscellaneous)	US $ 200
Monthly cost of the Project	1,400
Project Cost for 12 Months	16,800
TOTAL COST	17,000

Printed by the
UNITED NATIONS
INTERNATIONAL RESEARCH AND TRAINING
INSTITUTE FOR THE ADVANCEMENT OF WOMEN
Santo Domingo, Dominican Republic
January 1993
English - INSTRAW/SER.D/01 - 1000